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ABSTRACT

Adequate revenue is essential to the existence of good schools. Recognizing this truth, numerous governors have proposed and many states have adopted tax increases to enhance school funding. The real question is whether education spending increased more than it would have if taxes had not been increased. To answer these questions, the booklet was divided into three parts. First, it provides a framework for analyzing the relationship between tax increases and school revenue. Second, it describes the results of a study that examined how much school revenue rose in 49 states (Alaska is not included) between the 1982-83 and the 1992-93 school years. Finally, it considers 12 case studies of how various states attempted to increase education funding between 1982 and 1993--10 where state taxes were increased, 1 that instituted a lottery, and 1 that avoided raising state taxes at all. Findings indicate that: (1) The year after a reform there is always a big increase in state funding, but the follow-through differs; (2) the sales tax by itself does not provide the basis for large, sustained revenue increases; (3) the personal income tax is the best tool for increasing revenue, followed by the sales tax; (4) local taxes should not be neglected; (5) increasing taxes is always better for schools than leaving the tax system alone without a tax hike; and (6) there is no substitute for a strong economy. Fifteen tables and appendices containing statistical tables are included. (LMI)

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ED 397 502

Separating the Wheat from the Chaff:

How Much Do Schools Really Benefit

When States Raise Taxes on Their Behalf?

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The interpretations included in this report are solely those of the author. Any errors are his responsibility.

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INTRODUCTION

Adequate revenue is essential to the existence of good schools. Recognizing this truth, numerous governors have proposed and many states have adopted tax increases ostensibly to enhance school funding. But sometimes the reality falls short of the promise: education advocates may find themselves disappointed in the results that follow from ballyhooed initiatives to raise taxes on behalf of schools.

This booklet examines the record of school finance reforms since 1980 to see whether elementary/secondary education actually benefited when states increased taxes to help it. This issue is not as simple as it may appear at first glance. For example, the fact that school funding rises in the wake of a tax increase does not prove anything. Appropriations for most programs ordinarily go up year after year in any case. The real question is whether education spending increased more than it would have if taxes had not been increased. Did it grow faster in states with highly publicized tax initiatives than elsewhere? Did the new tax money all go for schools, or was some of it diverted to other programs?

To answer these questions, this booklet has three parts: First, it provides a framework for analyzing the relationship between tax increases and school revenue. Second, it describes the results of a study of how much school revenue rose in 49 states between the 1982-83 and the 1992-93 school years.[1] Finally, it considers 12 case studies of how various states attempted to increase education funding between 1982 and 1993—10 where state taxes were increased, one that instituted a lottery, and one that avoided raising state taxes at all.

This is not just an academic exercise. It should provide helpful guidance to education advocates in developing proposals that will actually produce real increases in school resources. At the same time, it can help states to avoid pitfalls that have befallen other states that thought they were accomplishing more than they actually were.

[1] *Alaska is not included because of its unique dependence on revenue from oil production.*

Two Notes about Methodology and Semantics

This report analyzes revenue rather than spending because it is concerned with distinguishing between revenue provided by the state government and by local school districts. It focuses on total state-local revenue and how much came from each source. It does not consider revenue provided by the federal government, nor does it consider spending financed by borrowing.

Although revenue and spending tend to be highly correlated, there are some differences. The most widely used spending data relate to current expenditures, which do not include spending for debt service or capital construction, even though revenue is needed to cover debt service and sometimes capital outlays. Thus, revenue is a more comprehensive measure than current spending.

Another source of confusion concerns how years are referred to. Legislatures normally pass budgets and enact tax increases during the first half of the calendar year, but those tax changes do not affect school finances until at least the following school year. Thus, the earliest tax increase discussed in this booklet was enacted in 1982 in Vermont, affecting revenue during the 1982-83 school year. School years are referred to in this report by the year in which they end. In other words, a tax increase enacted in 1984 would affect school budgets no earlier than 1985.

FRAMEWORK

Three ideas are important to consider in analyzing how tax increases are related to school revenue growth:

1. Most revenue growth does not result from legislated tax increases. Rather, it comes from the increase in revenue from the existing tax system as the economy expands and prices rise.

2. Some taxes naturally produce much more revenue growth over time than other taxes.

3. Even if a tax increase supposedly is earmarked for education, part of the revenue often will go for non-education programs.

Non-Legislated Tax Increases

Politicians often campaign on the promise of "no new taxes" and brag about "not having raised taxes." Such talk misses the point that tax revenue may increase even if new taxes are not imposed, tax rates are not raised, and exemptions are not eliminated.[2]

This happens two ways:

- Inflation automatically increases tax revenue. When prices rise, this naturally increases the yield of the retail sales tax. Inflation also tends to make wages and profits increase, resulting in higher revenue from the personal and corporate income taxes.

- Even if there were no inflation, revenue would tend to increase because of economic growth. Some people have higher real income, and the population grows, so sales increase for both consumer and producer goods and services (although many services are exempt from the sales tax).

Differences in the Responsiveness to Economic Growth

All taxes are not the same. As explained in another NEA booklet, *Tax Options for States Needing More School Revenue*, some taxes naturally produce more revenue over time than others. Economists refer to this characteristic of taxes as their income elasticity, which is defined as the percentage change in tax revenue divided by the percentage change in personal income. Personal income is a broad measure of the size of a state's economy—all of the income (wages, salaries, interest, profits, dividends, and rental payments)[3] received by its residents in a year.

For example, suppose that personal income grows 10 percent. Other things being equal, this could produce a 13 percent revenue increase from tax A, a 10 percent increase from tax B, an 8 percent increase from tax C, and a mere 2 percent increase from tax D. The elasticities of these taxes are 1.3, 1.0, 0.8, and 0.2, respectively. Tax A is said to be elastic because tax revenue grows faster than personal income. Taxes C and D are said to be inelastic.

People who want to see school funding go up are well advised to push for an increase of tax A as their first choice and tax B as an alternative. Raising tax D is not a good idea.

Those who want sustained revenue growth for schools should be concerned with more than

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[2]Another common way that legislators keep their "no new taxes" campaign promises is by creating new programs without providing funding for them. In this situation, state taxes do not go up, but local school boards must raise taxes to pay for the new or enhanced programs.

[3]For technical reasons, capital gains (the profit realized on sales of property) are not included in personal income, but some kinds of non-cash income, like certain fringe benefits, are included.

just how much education funding is increased in the year after the enactment of a tax increase. A school finance reform that relies on inelastic taxes (whose revenue grows more slowly than personal income) is much less desirable than one that increases elastic taxes.

So what does the elasticity of a tax depend on? One of the main factors is whether what is taxed is based on a thing's value or quantity. A tax based on values, like the income tax or general sales tax, will ordinarily have a higher elasticity because it reflects inflation. The cigarette and gasoline taxes, on the other hand, are usually based on quantities, like the number of packs of cigarettes or gallons of gasoline purchased. That is one reason why those taxes have a low elasticity. If the price of a pack of cigarettes rises 10 percent, tax revenue is likely to go down because fewer packs will be sold. By contrast, if insurance premiums increase 10 percent, the tax on them usually rises approximately by that amount because the insurance premium tax is based on a value rather than a quantity, and the amount of insurance purchased is not affected much by small price increases.

The elasticity of the personal income and general sales taxes depends on their structure and coverage:[4]

- The personal income tax normally has a higher elasticity than any other major state tax. The elasticity is higher the more progressive that tax rates are, because taxpayers move into higher brackets as their income rises. Elasticity is lower if the income tax brackets are indexed to remove the effects of inflation. The average state income tax has an elasticity of approximately 1.2, implying that when personal income increases 5 percent, tax revenue will grow 6 percent. Some states levy income taxes that have considerably higher elasticities.[5]

- The sales tax's elasticity depends on its coverage. If many services are taxed, elasticity is higher; if food is taxed, elasticity is lower because families tend to spend a smaller proportion of their income on food as they become wealthier.[6] In most states, the elasticity of the sales tax is between 0.9 and 1.0, meaning that when personal income grows 5 percent, tax revenue will increase 4.5 to 5 percent.

The elasticity of the corporation income tax would be approximately 1.0 if profits grew at the same rate as the overall economy and the tax had a flat rate. It has been lower than that for the past 15 years because during much of that period profits grew slower than total output.[7] Corporations also have become more astute and aggressive about minimizing the increase of their corporate tax liability.

The property tax's elasticity varies considerably, depending in part on whether assessments are updated frequently as the market value of property changes. If assessments lag considerably behind market values, the elasticity is lower. Another consideration is how demographics are affecting the demand for homes. From the 1950s to the 1970s, there was a strong increase in the demand for homes, at first because of pent-up

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[4] *This discussion relates to long-run elasticities. From year to year, the elasticity of taxes is volatile, rising during periods of strong economic growth and decreasing during recessions.*

[5] *Steven D. Gold, "The Income Elasticity of State Tax Systems: New Evidence" (Albany: Center for the Study of the States, 1995); also published in* State Tax Notes *8 (May 1, 1995), pp. 1849-1856.*

[6] *This refers to food purchased for home consumption. All state sales taxes apply to restaurant meals.*

[7] *The Congressional Budget Office expects the ratio of profits to Gross Domestic Product to continue to decrease.* The Economic and Budget Outlook: Fiscal Years 1996-2000 *(Washington, D.C.: January 1995), p. 55.*

demand after World War II and new federal programs to promote home ownership and later because of the baby boomers' reaching adulthood. But now the demand for homes is growing much more slowly. The number of new households being formed is lower because most baby boomers have long since become established homeowners. Thus, the elasticity of the property tax in the 1990s is considerably lower than it was before 1980.

Earmarking

When taxes are raised to support education, at least some of the revenue often goes to other programs. This happens even if the tax increase is formally earmarked for schools.

Suppose, for example, that a state provided $2 billion of school aid in 1994 and then raised the sales tax one cent, producing an additional $200 million in tax revenue. If it increased school aid to $2.2 billion in 1995, it would be wrong to conclude the entire tax increase was devoted to schools. If taxes had not been raised, school aid might have increased 5 percent, to $2.1 billion, because of economic growth and inflation. In that case, schools received an extra $100 million from the sales tax increase, but other programs received the other $100 million. To estimate the extent to which schools benefit from a tax increase, then, one has to project what they would have received if the increase did not occur. One indicator is whether their share of the budget goes up. But one would have to consider changes in enrollment and forces that could be leading other programs to have bigger or smaller spending increases, such as health cost inflation and a recession that drives up Medicaid caseloads.

One also has to consider not just the year after taxes are increased, but subsequent years as well. If the revenue produced by the higher sales tax in the example cited above grows over time, does all of it go to school aid? It is difficult to keep track of such issues.

Even if state education aid goes up by the full amount of a tax increase, it does not necessarily follow that total school revenue will rise commensurably. Local school districts might respond to the aid increase by cutting back on how much tax revenue they would have raised otherwise. In the example above, if local tax revenue increases $20 million less than it would have otherwise, net school revenue will be just $80 million higher as a result of the state tax increase.

In discussing the impact of Medicaid spending on state taxes, Harold Hovey, a leading commentator on state finances, has suggested that it is much easier to use education as a pretext for raising taxes than other programs, even when schools are not the only beneficiary of the tax increase:

> No legislature in history has cut education to fund Medicaid. No legislature has raised taxes to fund Medicaid. Legislators do raise money for education.... So the inquiry of where the Medicaid money comes from is inherently complex.[5]

Conclusion

Just because state officials say that they are raising taxes to improve school funding does not necessarily make it so. Education is at times a popular banner in which to cloak a tax increase.

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[5] *Harold Hovey, "Who Pays When State Health Care Costs Rise?" in Advisory Committee on Social Security,* State Governments: The Effect of Health Care Program Expansion in a Period of Fiscal Stress *(Washington, D.C.: 1991), p. 101.*

But unbridled cynicism is not warranted either. Schools usually do benefit to some extent when taxes are raised on their behalf. The issue to be explored in the following chapters is how much school revenue actually has increased as a result of tax increases enacted to help schools. Perhaps some lessons can be learned about the conditions that favor school revenue increases. If so, those lessons can be used in designing future programs to enhance school resources.

CHANGES IN SCHOOL REVENUE, 1982-83 TO 1992-93

State and local school revenue per pupil rose 31.8 percent between the 1982-83 and 1992-93 school years, after removing the effects of inflation. The rate of increase varied widely among states, with four states having increases of greater than 60 percent—Connecticut, Indiana, Maine, and West Virginia—while two states had decreases—North Dakota and Wyoming. The first column of numbers from Table 1 shows the increase or decrease in each of the 49 states included in this analysis. Alaska has been excluded because its finances are so atypical. More than 85 percent of its state tax revenue is paid by oil companies.

In order to account for the large differences in revenue increases among the states shown in Table 1, a statistical analysis was conducted. The technical details of that analysis are discussed in the Appendix to this chapter. This analysis, which used a multiple regression methodology, was able to account for 66 percent of the variation among states in the rate of increase of revenue per pupil. It found

Table 1. Percentage Real State-Local Education Revenue Per Pupil Increase, 1983-1993: Actual, Predicted, and Residual

State	Actual	Predicted	Residual	State	Actual	Predicted	Residual
Alabama	21.6	43.5	-21.9	Nebraska	26.8	18.0	8.8
Arizona	32.8	27.7	5.1	Nevada	29.4	21.5	7.9
Arkansas	47.4	46.5	0.9	New Hampshire	51.2	34.4	16.8
California	22.8	24.9	-2.1	New Jersey	56.8	45.1	11.7
Colorado	5.1	22.6	-17.5	New Mexico	0.5	-1.9	2.4
Connecticut	60.1	52.6	7.5	New York	34.2	37.8	-3.6
Delaware	18.8	21.0	-2.2	North Carolina	56.0	54.0	2.0
Florida	29.3	17.7	11.6	North Dakota	-5.0	-20.8	15.8
Georgia	39.6	44.2	-4.6	Ohio	35.7	40.7	-5.0
Hawaii	28.7	32.0	-3.3	Oklahoma	11.9	0.8	11.1
Idaho	27.4	32.6	-5.2	Oregon	11.1	24.5	-13.4
Illinois	19.6	35.5	-15.9	Pennsylvania	58.5	41.3	17.2
Indiana	61.6	41.3	20.3	Rhode Island	35.2	34.3	0.9
Iowa	15.0	19.0	-4.0	South Carolina	51.6	49.7	1.9
Kansas	8.9	14.7	-5.8	South Dakota	11.7	17.0	-5.3
Kentucky	47.1	48.8	-1.8	Tennesse	33.1	50.9	-17.8
Louisiana	8.8	11.6	-2.8	Texas	27.9	16.7	11.2
Maine	62.6	50.7	11.9	Utah	2.2	26.8	-24.6
Maryland	31.1	37.0	-5.9	Vermont	55.7	34.3	21.4
Massachusetts	31.5	38.7	-7.3	Virginia	36.9	34.3	2.6
Michigan	46.3	42.3	4.0	Washington	37.6	34.8	2.8
Minnesota	23.1	23.0	0.1	West Virginia	60.9	61.4	-0.5
Mississippi	32.5	34.3	-1.8	Wisconsin	34.6	30.0	4.6
Missouri	32.6	31.6	1.0	Wyoming	-27.3	-12.8	-14.5
Montana	0.2	15.4	-15.2				

*These revenue numbers are based on National Education Association data available as of October 1994. Many of the revenue figures have since been revised. Those revisions were not used in this statistical analysis, but are reflected in the state-by-state revenue in Appendix Tables A-C, as well as in the case studies in the next section.

that, other things being equal, the following five factors helped to explain that variation:

- *Personal income growth*: Revenue increased more where income per capita rose the most. In other words, a strong economy was conducive to a relatively large school revenue increase.

- *Enrollment change*: Changes in revenue per pupil were inversely related to changes in school enrollment. Where school enrollment rose strongly, per pupil revenue did not go up as much because so many children had to be served and because costs do not increase proportionately with enrollment. Where enrollment fell, spending tended to go up more.

- *Per pupil revenue in 1983*: Levels of revenue tended to converge. If a state had relatively low revenue per pupil in 1983, it was likely to have a bigger revenue increase in the next decade, representing an effort by such states to catch up with others.

- *Court cases*: Revenue increased more if plaintiffs had won a case at the state supreme court level challenging the state's system of school finance. Even if plaintiffs lost, litigation had a positive effect on revenue (although it was not statistically significant). This could mean that the publicity resulting from a state supreme court case helped to increase revenue. (Any case after 1970 is included because it could continue to influence school policy long after it was decided, if only because of the possibility that another case would be filed.) Since we are concerned only with revenue changes through 1993, cases decided in 1993, 1994, or 1995 are not considered here.[9]

- *State economy dependent on energy or farming*: These were two relatively depressed industries in the 10 years after 1983, so state economies where energy production and agriculture are significant did not generate as large increases in tax revenue as other states.[10]

The second column of numbers in Table 1 shows the revenue increase that the statistical analysis predicted, and the third column shows the difference between the actual and the predicted increases.[11] For example, in New York, the actual increase was 34.2 percent and the statistical analysis predicted a 37.8 percent increase, indicating that the growth was 3.7 percentage points less than can be explained by the statistics. On the other hand, in Minnesota the analysis was able to account for almost precisely the amount of growth that occurred (23.1 %).

To summarize the findings:

1. The *economy is most important*. A booming economy is good for schools (as it is for funding of other public services as well). The change of personal income per capita is a good measure of economic strength, but it is not perfect. States with major farm and oil industries fared even worse than would have been expected based on their sluggish income growth.

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[9] *Cases were decided in 1993 or later in Alabama, Arizona, Kansas, Massachusetts, Minnesota, Missouri, New Hampshire, North Dakota, Ohio, Rhode Island, South Dakota, and Tennessee.*

[10] *Two theories could account for this finding. First, personal income is less than a perfect indicator of economic trends in a state. Second, states where energy production was a large part of the economy often had tax systems that relied heavily on taxing energy.*

[11] *The difference between the actual and the predicted increases might be interpreted as showing the political commitment to raising school revenue, other things being equal. This interpretation is not valid to the extent that other important influences on school revenue that should have been included in the analysis were omitted.*

Note that it is per capita income rather than total income that is relevant here. Some states, like Arizona, had such large population increases that even though total income rose substantially, per capita income growth was only moderate.[12]

Examples: North Carolina, Tennessee, Maine, and South Dakota had particularly large increases in personal income per capita. Oklahoma, California, Louisiana, and North Dakota had relatively small increases.

2. *Big enrollment increases make it harder to raise per pupil spending, and enrollment decreases help to boost spending per pupil.* During this period most states had rising enrollment, but the number of pupils fell in more than a dozen states.

Examples: Nevada, Florida, California, Utah, Arizona, Washington, and Texas had especially big enrollment increases, ranging from 18 to 47 percent. West Virginia had a 15 percent decrease in enrollment. Indiana, Massachusetts, Michigan, New Jersey, and Pennsylvania each lost at least 4 percent of their school enrollment.

3. *States play catch up.* Interstate competition can boost spending in low-tax states even though it depresses tax rates in high-tax states. A poor school system is a drag on economic development. Businesses are less likely to invest in a state if its labor force is considered sub-par, so many states with low education spending have acted to bring themselves closer into line with school resources provided elsewhere. This is an important reason why there has been so much interest in strengthening school finance systems in the South.

4. *Litigation is a expenditure stimulant.* States with a history of state supreme court rulings overturning their school finance system are more likely to raise taxes for schools. In most cases, the decisions require that inequalities between rich and poor school districts be reduced. It is easier politically to "level up" spending, that is, to give more money to low-wealth districts, than to "level down," which would take money from wealthy, high-spending districts and give it to districts with smaller tax bases. The courts sometimes have to "put a gun to the head" of governors and legislators before they will act.

State-by-State Results

This section discusses what the regression results imply about each state. The results refer to per pupil revenue from state and local sources adjusted for inflation. Table 2 shows the value of each of the five key explanatory measures in all 49 states.

Alabama had a much smaller revenue per pupil increase than predicted. The analysis predicted a 43.5 percent increase, but school revenue actually rose only 21.6 percent. Alabama should have been helped by its relatively large growth of personal income and by the tendency for revenue to converge, since it had extremely low revenue in 1983. But for some statistically unexplained reason, it did much worse than expected.

Alaska was not included in the analysis.

Arizona's 32.8 percent increase was 5.1 percentage points more than explained by the analysis. Revenue growth was hurt by a relatively small per capita income increase and the rapid increase in enrollment. It was helped by the tendency for revenue levels to converge and an unsuccessful 1973 court case.

[12] *Of course, if the analysis were concerned with the change of total school revenue rather than revenue per pupil, total personal income would be more appropriate to include than per capita income.*

Table 2. Data for Statistical Analysis

STATE	Changes from 1983 to 1993 (1) % Revenue Increase	(2) % Personal Income Increase	(3) % Enrollment Change	(4) Per Pupil Revenue 1983 - $	Court Cases 1970-1992 (5) Won	(6) Lost	Economy (7) Avg. % Agriculture 1983-93	(8) 1983 % Severance Tax
Alabama	21.6	24.6	0.4	2551	0	0	1.7	2.4
Arizona	32.8	12.5	23.7	3350	0	1	1.2	0.0
Arkansas	47.4	20.2	1.9	2606	1	0	4.2	1.6
California	22.8	6.5	27.8	3900	1	0	1.3	0.1
Colorado	5.1	11.1	12.4	4625	0	1	1.4	0.7
Connecticut	60.1	24.7	-3.2	4980	1	0	0.3	0.0
Delaware	18.8	15.7	12.6	4815	0	0	1.4	0.0
Florida	29.3	17.6	33.3	4017	0	0	1.3	1.3
Georgia	39.6	23.8	14.6	2982	0	1	1.3	0.0
Hawaii	28.7	23.5	9.3	4412	0	0	1.5	0.0
Idaho	27.4	22.6	12.6	2783	0	1	5.9	0.1
Illinois	19.6	19.6	-0.1	4100	0	0	0.7	0.0
Indiana	61.6	21.2	-4.0	3488	0	0	0.9	0.0
Iowa	15.0	13.4	-2.1	4213	0	0	4.6	0.0
Kansas	8.9	12.9	10.9	4545	0	0	3.4	0.1
Kentucky	47.1	22.9	-1.5	2954	1	0	2.1	6.7
Louisiana	8.8	7.6	0.3	3569	0	1	0.9	18.6
Maine	62.6	25.3	-0.1	3436	0	1	0.7	0.0
Maryland	31.1	20.2	7.5	4637	0	1	0.4	0.0
Massachusetts	31.5	22.9	-5.4	4770	0	0	0.2	0.0
Michigan	46.3	18.5	-8.5	4314	0	1	0.5	0.7
Minnesota	23.1	19.7	10.8	4604	0	0	2.2	1.4
Mississippi	32.5	22.6	9.0	2242	0	0	2.4	5.8
Missouri	32.6	15.2	4.7	3522	0	0	0.9	0.0
Montana	0.2	12.7	5.1	4698	1	0	3.3	14.3
Nebraska	26.8	20.4	4.6	3686	0	0	7.6	0.3
Nevada	29.4	22.0	47.5	3832	0	0	0.3	0.0
New Hampshire	51.2	21.2	13.1	3879	0	0	0.2	0.0
New Jersey	56.8	22.0	-3.6	5932	1	0	0.2	0.0
New Mexico	0.5	13.3	9.5	3959	0	0	1.6	24.1
New York	34.2	23.9	-0.6	5870	0	1	0.2	0.0
North Carolina	56.0	28.7	-0.1	2929	0	1	1.8	0.0
North Dakota	-5.0	9.5	1.8	4308	0	0	7.4	24.7
Ohio	35.7	16.2	-2.9	3906	0	1	0.5	0.0
Oklahoma	11.9	2.9	0.6	3583	0	1	2.2	21.0
Oregon	11.1	17.1	13.6	4861	0	1	2.0	1.5
Pennsylvania	58.5	21.2	-3.7	4821	0	1	0.5	0.0
Rhode Island	35.2	20.1	2.6	4438	0	0	0.3	0.0
South Carolina	51.6	22.8	4.2	2857	0	1	0.7	0.0
South Dakota	11.7	25.0	8.1	3560	0	0	9.2	0.9
Tennessee	33.1	28.4	1.9	2629	0	0	0.9	0.1
Texas	27.9	9.3	18.4	3890	1	0	1.3	13.9
Utah	2.2	18.1	24.9	3265	0	0	0.8	1.3
Vermont	55.7	24.1	7.7	4192	0	0	1.5	0.0
Virginia	36.9	18.2	5.8	3750	0	0	0.5	0.0
Washington	37.6	17.5	21.6	4138	1	0	1.9	0.7
West Virginia	60.9	20.0	-15.3	3352	1	0	0.2	0.0
Wisconsin	34.6	16.4	5.7	4577	0	1	1.9	0.0
Wyoming	-27.3	11.4	-1.3	7815	1	0	1.4	31.0
U.S. Average (unweighted)	27.4	18.5	6.8	4003	0.2	0.33	1.8	3.5

Arkansas had a relatively large 47.4 percent increase, just 0.9 more than the statistical analysis predicted. Revenue growth was helped by a big income increase and the tendency for revenue levels to converge, since its spending in 1983 was very low. It was also helped by a successful 1983 court case but hurt by the state's dependence on agriculture.

California had a below average 22.8 percent increase, 2.1 percent less than predicted. Revenue growth was hurt by slow growth of per capita income and a rapid enrollment increase. It was helped by a successful 1976 court challenge to its school finance system. (California fared much better in the early part of the period than later. Real revenue per pupil rose from $3,900 to $4,914 between 1983 and 1988 and then fell to $4,787 in the following five years.) Without Proposition 98, which provides a minimum annual funding level for K-14 school agencies, revenue per pupil would have fallen even more.

Colorado's revenue per pupil rose a meager 5.1 percent, which was 17.5 percent less than the statistical analysis predicted. Colorado was one of the states with the largest shortfalls from what was expected, perhaps because of its conservative political culture or deficiencies of the statistical model (e.g., Colorado was badly hurt by the bust in the energy industry even though it did not have a large severance tax.) Its revenue increase was depressed by slow income growth, above-average enrollment increases, and a high initial level of revenue per pupil.

Connecticut's revenue per pupil increased 60.1 percent, one of the largest increases in the country. Revenue growth was helped by one of the fastest income growth rates in the country along with declining enrollment. These factors overcame the depressing effect of its relatively high revenue per pupil in 1983. The increase in revenue per pupil was 7.5 percentage points higher than predicted by the statistical analysis.

Delaware's revenue per pupil rose 18.8 percent. Its increase was dampened by the high level of revenue per pupil in 1983 and its relatively big enrollment increase. Revenue growth was 2.2 percentage points less than predicted.

Florida had a 29.3 percent increase, considerably more than the 17.7 percent growth predicted by the statistical analysis. Revenue growth was helped by the low initial revenue per pupil but hurt by its 33 percent increase in enrollment. The large unexplained increase suggests that government officials placed a relatively high priority on increasing school revenue during this period.

Georgia's increase was 39.6 percent. It was supported by a large increase in per capita income and a low initial level of revenue per pupil, but it was somewhat depressed by a 15 percent enrollment increase. Revenue grew 4.6 percentage points less than predicted.

Hawaiian revenue per pupil rose 28.7 percent, not far from the national average. Revenue growth was pulled down by relatively high revenue per pupil in 1983 but boosted by strong growth of per capita income. Revenue grew 3.3 percentage points less than predicted.

Idaho's revenue per pupil grew 27.4 percent. Revenue growth was hurt by a 13 percent enrollment increase and a large farm sector, while it was helped by low initial spending, strong income growth and an unsuccessful 1975 court challenge. Revenue grew 5.2 percentage points less than predicted.

Illinois's revenue per pupil increased only 19.6 percent, which was 15.9 percentage points less than the statistical analysis predicted.

Revenue growth was depressed by the relatively high revenue per pupil in 1983.

Indiana's revenue per pupil soared 61.6 percent, one of the largest increases in the nation. This was 20.3 percentage points more than predicted. As discussed in the following chapter, the state's political commitment to improved school funding led to a 1987 tax increase, which helps to account for the big revenue increase that occurred. Revenue growth also was helped somewhat by low revenue per pupil in 1983, a 4 percent enrollment decrease, and above-average income growth.

Iowa's revenue per pupil rose only 15 percent. Revenue growth was hurt by slow income growth, heavy dependence on farming, and above-average revenue per pupil in 1983. The revenue increase was 4 percentage points less than the statistical analysis predicted.

Kansas's revenue per pupil increased a meager 8.9 percent. Like Iowa, it was hurt by slow income growth, the agricultural orientation of its economy, and relatively high revenue per pupil in 1983. Revenue per pupil increases were also hurt by 11 percent enrollment growth. Revenue grew 5.8 percentage points less than the statistical analysis predicted.

Kentucky had a big 47.1 percent revenue per pupil increase. Revenue growth was helped by low initial revenue per pupil, a relatively fast increase of per capita income, and a successful 1989 court challenge to its school finance system. It was hurt by reliance on farming and mineral production. Despite the dramatic initiatives to increase school spending discussed in the following chapter, the statistical model did a good job predicting its revenue increase, with an error of only -1.7 percentage points.

Louisiana's revenue per pupil increased only 8.8 percent. Its economy was depressed because of its energy dependence, and personal income growth was far below average. Revenue growth was helped by its low revenue per pupil in 1983 and an unsuccessful 1988 court challenge. The very small revenue increase was 2.8 percentage points lower than the statistical analysis predicted.

Maine had the largest revenue per pupil increase in the country, 62.6 percent. Revenue growth was helped by low initial revenue per pupil, strong growth of per capita income, and a losing court challenge. While the statistical model predicted a big increase, the actual rise was 11.9 percentage points higher than predicted.

Maryland's increase was 31.1 percent, about equal to the national average. Strong income growth offset its relatively high revenue per pupil in 1983, and a losing 1983 court challenge also helped. Revenue grew 5.9 percentage points less than predicted.

Massachusetts's revenue per pupil rose 31.5 percent, which was 7.2 percentage points less than predicted. Its profile is similar to Maryland's except that enrollment growth was somewhat greater and income growth slightly less, while it did not have a court challenge before 1993.

Michigan increased revenue per pupil a strong 46.3 percent. Revenue growth was helped by an 8 percent enrollment decline and a failed court challenge in 1984, but it was hurt by relatively high revenue per pupil in 1983. The actual increase was 4 percentage points higher than predicted by the statistical analysis.

Minnesota's revenue per pupil rose 23.1 percent. Its increase was reduced by high revenue per pupil in 1983, an 11 percent enrollment increase, and a relatively big farm sector and

weak severance tax collections on taconite. The statistical analysis did nearly a perfect job predicting the increase.

Mississippi increased revenue per pupil 32.5 percent, a rate close to the national average. Revenue growth was helped by very low revenue per pupil in 1983 and above average income growth, but it was hurt by a 9 percent enrollment increase and dependence on farming and oil production. Its increase was 1.8 percent less than predicted by the statistical analysis.

Missouri's increase was 32.6 percent, also about average. Missouri's growth was slightly helped by low initial revenue per pupil but penalized by below average income growth. Its increase was 1.0 percent more than predicted by the statistical analysis.

Montana had virtually no increase in revenue per pupil. This poor record was due to weak economic growth, the depressed mineral and farm economies, and a relatively high revenue per pupil in 1983. Revenue growth should have been helped by a successful 1989 court challenge, but revenue grew 15.2 percentage points less than the statistical analysis predicted, one of the largest differences.

Nebraska raised revenue per pupil 26.8 percent. This was considerably more than predicted by the statistical analysis and better than nearby states like Colorado, Iowa, Kansas, and South Dakota. The tax reform discussed in the next section may have been helpful. Revenue growth was hurt by the state's dependence on agriculture but helped by below average revenue per pupil in 1983.

Nevada's revenue per pupil increased 29.4 percent. Revenue growth was badly hurt by a 47 percent enrollment increase, the largest in the country. The increase in revenue per pupil was 7.9 percentage points higher than predicted by the statistical analysis.

New Hampshire raised revenue per pupil a strong 51.2 percent. Its income growth was only a little above average, and revenue per pupil in 1983 was only slightly below average, so the statistical analysis did a poor job predicting its increase. The increase was 16.8 percentage points higher than predicted.

New Jersey's revenue per pupil growth was 56.8 percent, one of the highest rates in the United States. This occurred despite revenue per pupil in 1983 that was already among the highest in the nation. Successful court challenges in 1973 and 1990 were partly responsible for the big increase, as was above average income growth, but 11.7 percentage points of the increase was unexplained by the statistical analysis.

New Mexico's revenue per pupil barely increased at all. Revenue growth was hurt by weak income growth and dependence on severance taxes, although it was helped by low revenue per pupil in 1983. The statistical analysis did a good job accounting for New Mexico's increase, which it underestimated by only 2.4 percentage points.

New York raised revenue per pupil 34.2 percent, slightly more than the national average. Revenue growth was helped by above average income growth but hurt by New York's high revenue per pupil in 1983. Revenue grew 3.6 percentage points less than the statistical analysis predicted.

North Carolina's revenue per pupil surged 56 percent. The statistical analysis explained all but 2.0 percentage points of this increase. Revenue benefited from strong income growth, a low ini-

tial level of revenue per pupil, and an unsuccessful 1987 court challenge.

North Dakota's revenue per pupil fell 5 percent. Revenue growth was depressed by weak income growth, heavy dependence on severance taxes and farming, and above-average revenue per pupil in 1983. In view of all these negative factors, North Dakota actually had a smaller decrease than the statistical analysis predicted. It predicted a 20.8 percentage point decrease.

Ohio raised revenue per pupil 35.7 percent. Income growth, the initial level of revenue per pupil, and the enrollment change were not far from the national average. The statistical model predicted that an unsuccessful 1979 court challenge would help revenue, but the model overpredicted revenue growth by 5 percentage points.

Oklahoma raised revenue per pupil only 11.9 percent. Revenue growth was hurt by anemic income growth and dependence on severance taxes, which more than offset its low revenue per pupil in 1983 and an unsuccessful 1987 court suit. The increase was 11.1 percentage points higher than predicted by the statistical analysis, perhaps because of a large 1990 tax increase dedicated to schools.

Oregon's revenue per pupil rose only 11.1 percent, which was less than half of what the statistical analysis predicted. Part of the reason is a citizen initiative approved in 1990 that slashed the property tax rate. Revenue growth was also hurt by a 14 percent enrollment increase and relatively high revenue per pupil in 1983.

Pennsylvania's revenue per pupil soared 58.5 percent. This was 17.2 percentage points higher than the statistical analysis predicted. Revenue growth was helped by above average income growth, a 4 percent enrollment decline, and losing court challenges in 1979 and 1987, but it was hurt by high revenue per pupil in 1983.

Rhode Island increased revenue per pupil 35.2 percent, almost exactly what the statistical analysis predicted. Its income growth was slightly above average, but its revenue per pupil in 1983 was also above average.

South Carolina raised revenue per pupil 51.6 percent. Revenue growth was helped by strong income growth, a low level of revenue per pupil in 1983, and an unsuccessful 1988 court challenge. The increase was 1.9 percentage points higher than predicted by the statistical analysis.

South Dakota's revenue per pupil rose only 11.7 percent, which was 5.3 percentage points less than the statistical analysis predicted. Revenue growth was badly hurt by dependence on agriculture, although it was helped by strong income growth and relatively low revenue per pupil in 1983.[13] An 8 percent enrollment increase also depressed revenue growth.

Tennessee's revenue per pupil rose 33.1 percent, slightly above the national average. Revenue growth was helped by strong income growth and a low level of revenue per pupil in 1983. Revenue grew 17.8 percentage points less than the statistical analysis predicted. In other words, based on the statistical patterns in other states, Tennessee revenue per pupil should have risen much more than it did; its weak tax system (with no broad-based income tax) could be part of the reason.

Texas boosted revenue per pupil 27.9 percent, somewhat less than the average increase but 11.2

[13] *South Dakota is an anomaly in that income grew strongly despite a large farm sector. Its economy benefited from a large expansion in credit card processing.*

percentage points more than the statistical analysis predicted. Revenue growth was hurt by weak economic growth, an 18 percent enrollment increase, and dependence on severance taxes. It was helped by court rulings in 1989 and later years that declared its school finance system unconstitutional.

Utah raised revenue per pupil only 2.2 percent. This was 24.6 percentage points less than the statistical analysis predicted, suggesting that Utah develops its education funding policies differently from other states. The biggest negative for revenue growth was a 25 percent enrollment increase, but revenue growth should have benefited from the low level of revenue per pupil in 1983.

Vermont increased revenue per pupil 55.7 percent, which was 21.4 percentage points more than predicted by the statistical analysis. Revenue growth benefited from strong income growth, but revenue per pupil was somewhat above average in 1983. The base year for this analysis already reflected a sales tax increase enacted in 1982 to increase state school aid. (That increase is discussed in the next section.)

Virginia's revenue per pupil rose 36.9 percent. Most of its characteristics that were included in the statistical analysis were about average. The increase was 2.6 percentage points higher than predicted.

Washington raised revenue per pupil 37.6 percent. Its revenue growth was hurt by a 22 percent enrollment increase but helped by a successful 1978 court challenge. The increase was 2.8 percentage points higher than predicted by the statistical analysis.

West Virginia's revenue per pupil soared 60.9 percent, almost exactly what the statistical analysis predicted. Revenue growth was helped by a successful 1979 court case, a 15 percent enrollment decrease (the largest in the country), low revenue per pupil in 1983, and a slightly above average income increase.

Wisconsin's revenue per pupil rose 34.6 percent. Its growth rate was hurt by relatively high revenue per pupil in 1983 and dependence on agriculture, but helped by an unsuccessful 1988 court challenge. The increase was 4.6 percentage points higher than predicted by the statistical analysis.

Wyoming's revenue per pupil fell 27.3 percent, the worst decrease in any state. The most important factors contributing to this were extraordinarily high revenue per pupil in 1983, a below average income increase, and heavy dependence on severance taxes as a source of state revenue. Revenue decreased 14.5 percentage points more than the statistical analysis predicted.

APPENDIX. MEASURING THE EFFECTS OF EACH VARIABLE

Table 3 shows how much each variable contributed to explaining revenue growth. It should be studied in combination with Table 2. Here is how it and the other tables should be interpreted, using Arizona as an example:

- Arizona's revenue rose 32.8 percent, which was 5.1 percentage points higher than what the statistical model predicted. (This is shown by the first column of numbers and the last column of numbers of Table 3.)

- If all of the factors in the analysis had a value of 0, revenue would have risen 39.6 percent. (Second column of numbers of Table 3). This is not a realistic possibility because most factors had to have a positive or negative value.

- Inflation-adjusted per capita personal income was up 12.5 percent. (Second column of Table 2) This added 12.6 percentage points to education revenue growth. (Third column of Table 3.)

- Arizona's school enrollment rose 23.7 percent, one of the biggest increases in the country. (Column 3 of Table 2) This large increase had a negative effect on the growth of revenue per pupil (Column 4 of Table 3).

- In 1982-83, the starting point of the study, Arizona's per pupil revenue was $3,350. (Column 4 of Table 2) This figure, which is expressed in 1992-93 prices, is relatively low. It subtracted 18.0 percentage points from the growth rate, but it reduced the growth rate of revenue less in Arizona than in most other states. (Column 5 of Table 3) States with higher per pupil revenue in 1982-83 had larger subtractions.

- Arizona's economy does not depend much on farming, and it has so little energy production that it does not impose a severance tax. (Columns 7 and 8 of Table 2) These were advantages during this period when agriculture and oil drilling were depressed. These factors subtracted only 3.1 percentage points from the growth of school revenue, much less than in states where those industries are larger[14] (Column 6 of Table 3).

- Arizona had an unsuccessful court challenge to its school finance system in 1973. This statistically contributed 5.9 percentage points to its revenue growth, less than half of what a successful court challenge would have added but more than if there had been no legal challenge at all (Column 7 of Table 3).

In interpreting these results, one must remember that statistical analyses are based on average relationships among quantifiable variables. They inherently must oversimplify because they never include all of the relevant factors, and some influences can be measured only imperfectly. Nevertheless, the results summarized in Table 3 are helpful in understanding why school revenue growth rates varied so much.

Multiple Regression Analysis

The multiple regression analysis used ordinary least squares. Table 4 presents the results,

[14] *This variable and the previous one have negative effects on the growth rate in all states because they have positive values themselves. These negative effects are balanced by the constant term in the regression, which is positive for all states (39.6). States with relatively low values of 1983 revenue per pupil and reliance on severance taxes and farming have relatively small subtractions for these variables; in combination with the constant term, this raises their growth rate of revenue per pupil.*

Table 3. Determinants of Education Revenue Growth Rates by State, 1983-1993

STATE	(1) Actual change	(2) Constant	(3) Change from income	(4) Change from enrollment	(5) Change from convergence to national average	(6) Change from farm income & severance tax	(7) Change from court cases	(8) Unexplained change
	%	%	%	%	%	%	%	%
Alabama	21.6	39.6	24.8	-0.2	-13.7	-7.1	0.0	-21.9
Arizona	32.8	39.6	12.6	-9.4	-18.0	-3.2	6.0	5.1
Arkansas	47.4	39.6	20.3	-0.7	-14.0	-12.9	14.2	0.9
California	22.8	39.6	6.6	-11.0	-20.9	-3.5	14.2	-2.1
Colorado	5.1	39.6	11.2	-4.9	-24.8	-4.5	6.0	-17.5
Connecticut	60.1	39.6	24.9	1.3	-26.7	-0.7	14.2	7.5
Delaware	18.8	39.6	15.8	-5.0	-25.8	-3.6	0.0	-2.2
Florida	29.3	39.6	17.6	-13.2	-21.5	-4.8	0.0	11.6
Georgia	39.6	39.6	23.9	-5.8	-16.0	-3.6	6.0	-4.6
Hawaii	28.7	39.6	23.7	-3.7	-23.6	-4.0	0.0	-3.3
Idaho	27.4	39.6	22.7	-5.0	-14.9	-15.8	6.0	-5.2
Illinois	19.6	39.6	19.7	0.0	-22.0	-1.9	0.0	-15.9
Indiana	61.6	39.6	21.3	1.6	-18.7	-2.5	0.0	20.3
Iowa	15.0	39.6	13.5	0.8	-22.6	-12.4	0.0	-4.0
Kansas	8.9	39.6	13.0	-4.3	-24.4	-9.2	0.0	-5.8
Kentucky	47.1	39.6	23.1	0.6	-15.8	-12.8	14.2	-1.7
Louisiana	8.8	39.6	7.6	-0.1	-19.1	-22.3	6.0	-2.8
Maine	62.6	39.6	25.4	0.0	-18.4	-2.0	6.0	11.9
Maryland	31.1	39.6	20.3	-3.0	-24.8	-1.1	6.0	-5.9
Massachusetts	31.5	39.6	23.0	2.1	-25.6	-0.5	0.0	-7.2
Michigan	46.3	39.6	18.6	3.4	-23.1	-2.1	6.0	4.0
Minnesota	23.1	39.0	19.8	-4.3	-24.7	-7.5	0.0	0.1
Mississippi	32.5	39.6	22.7	-3.6	-12.0	-12.4	0.0	-1.8
Missouri	32.6	39.6	15.2	-1.9	-18.9	-2.5	0.0	1.0
Montana	0.2	39.6	12.8	-2.0	-25.2	-24.0	14.2	-15.2
Nebraska	26.8	39.6	20.5	-1.8	-19.8	-20.6	0.0	8.8
Nevada	29.4	39.6	22.1	-18.9	-20.5	-0.9	0.0	7.9
New Hampshire	51.2	39.6	21.4	-5.2	-20.8	-0.6	0.0	16.8
New Jersey	56.8	39.6	22.1	1.4	-31.8	-0.5	14.2	11.7
New Mexico	0.5	39.6	13.4	-3.8	-21.2	-30.0	0.0	2.4
New York	34.2	39.6	24.0	0.2	-31.5	-0.5	6.0	-3.6
North Carolina	56.0	39.6	28.9	0.0	-15.7	-4.9	6.0	2.0

Table 3. Determinants of Education Revenue Growth Rates by State, 1983-1993 (continued)

STATE	(1) Actual change	(2) Constant	(3) Change from income	(4) Change from enrollment	(5) Change from convergence to national average	(6) Change from farm income & severance tax	(7) Change from court cases	(8) Unexplained change
	%	%	%	%	%	%	%	%
North Dakota	-5.0	39.6	9.5	-0.7	-23.1	-46.2	0.0	15.8
Ohio	35.7	39.6	16.3	1.1	-20.9	-1.4	6.0	-5.0
Oklahoma	11.9	39.6	2.9	-0.2	-19.2	-28.3	6.0	11.1
Oregon	11.1	39.6	17.2	-5.4	-26.1	-6.9	6.0	-13.4
Pennsylvania	58.5	39.6	21.4	1.5	-25.8	-1.3	6.0	17.2
Rhode Island	35.2	39.6	20.2	-1.0	-23.8	-0.7	0.0	0.9
South Carolina	51.6	39.6	22.9	-1.7	-15.3	-1.8	6.0	1.9
South Dakota	11.7	39.6	25.2	-3.2	-19.1	-25.5	0.0	-5.3
Tennessee	33.1	39.6	28.6	-0.7	-14.1	-2.4	0.0	-17.8
Texas	27.9	39.6	9.4	-7.3	-20.8	-18.3	14.2	11.2
Utah	2.2	39.6	18.1	-9.9	-17.5	-3.6	0.0	-24.6
Vermont	55.7	39.6	24.3	-3.1	-22.5	-4.1	0.0	21.4
Virginia	36.9	39.6	18.3	-2.3	-20.1	-1.2	0.0	2.6
Washington	37.6	39.6	17.5	-8.6	-22.1	-5.8	14.2	2.8
West Virginia	60.9	39.6	20.1	6.1	-18.0	-0.6	14.2	-0.5
Wisconsin	34.6	39.6	16.4	-2.3	-24.5	-5.2	6.0	4.6
Wyoming	-27.3	39.6	11.5	0.5	-41.9	-36.7	14.2	-14.5

Table 4
Regression Results to Explain Percentage Change of Real per Pupil Revenue, 1982-83 to 1992-93

Variable	Coefficient	Standard Error	t-ratio	Mean of Variable
Constant	0.396*	0.127	3.134	
% increase income per capita	1.005*	0.386	2.604	0.18518
Plaintiff won court case	0.142*	0.465 x 10^{-1}	3.045	0.20408
Plaintiff lost court case	0.597 x 10^{-1}	0.397 x 10^{-1}	1.503	0.32653
Revenue/pupil in 1983	-0.536 x 10^{-4}*	0.186 x 10^{-4}	-2.876	4002.9
% income from agriculture	-0.267 x 10^{-1}*	0.891 x 10^{-2}	-2.999	1.8367
% revenue from severance taxes	-0.106 x 10^{-1}*	0.290 x 10^{-2}	3.673	3.5400
% change of enrollment	-0.397 *	0.161	2.461	0.06860

Adjusted R2 = .66

* Significant at 0.05 confidence level.

which are based on research by Dr. Therese McCarty, a professor of economics at Union College in Schenectady, New York. The analysis is based on National Education Association data available as of October 1994. Some of the revenue figures have since been revised. Those revisions were not used in the multiple regression analysis but are reflected in the state-by-state revenue tables below as well as in the case studies in the next section.

The definitions of the variables are as follows:

Percent change of real per pupil state and local revenue, 1982-83 to 1992-93: NEA data adjusted for inflation using the implicit deflator for state and local governments (average of two calendar years; 1992-93=100). The number of pupils is fall enrollment.[15]

Percent change of real personal income per capita, 1983-83 to 1992-93: Income was deflated with the implicit personal consumption deflator (1993=100). Source: State Trends on Demand.

[15] *Because the implicit deflator is recalculated each year, results vary slightly depending on the source used for it. This report used the figures included in the* Economic Report of the President *(February 1994). Revenue for each year was divided by the following factors: 1982-83, .691; 1983-84, .722; 1984-85, .756; 1985-86, .785; 1986-87, .813; 1987-88, .845; 1988-89, .881; 1989-90, .918; 1990-91, .951; 1991-92, .977; 1992-93, 1.00.*

Enrollment change: Percentage change in enrollment from the fall of 1982 to the fall of 1992. Source: NEA.

Revenue/pupil in 1983: Real per pupil state and local education revenue in 1982-83 expressed in 1992-93 prices using the implicit deflator for state and local governments. The number of pupils is fall enrollment. Source: NEA.

Plaintiff won court case: Dummy variable = 1 for states where plaintiff won a school finance case at the Supreme Court level between 1970 and 1992. Source: Alan Hickrod and Gregory Anthony, *Status of State School Finance Constitutional Litigation* (Illinois State University, Center for the Study of Educational Finance, August 1994).

Plaintiff lost court case: Dummy variable = 1 for states where plaintiff lost a school finance case at the Supreme Court level between 1970 and 1992. Source: Alan Hickrod and Gregory Anthony.

Farm income: Farm personal income as percent of total state personal income, average of years 1983 to 1993. Source: U.S. Commerce Dept.

Severance tax reliance: Severance tax revenue as percentage of total state-local tax revenue in 1983. Source: State Trends on Demand.

A sixth factor was also included in the regression analysis—the proportion of state tax revenue in 1983 from the personal income tax. Contrary to the expectation based on the discussion of tax elasticities, states with more reliance on income taxes had slower than average increases in school revenue.[16] This finding was not, however, statistically significant at the .10 level.

Other variables included in preliminary regressions but not reported because of insignificant results include dummy variables for states that fully index the personal income tax and states with broad sales taxes on services. Dummy variables were also used for Oregon and Nevada because those states were believed to have unusual features not captured by the other variables.[17]

State-by-State Revenue Levels

Appendix Table A shows the level of revenue per pupil each year from 1982-83 to 1992-93, with all revenue expressed in 1992-93 dollars. The amount of revenue per pupil provided by the state government from 1982-83 to 1992-93 (in 1992-93 dollars) is listed in Appendix Table B and the amount of local government revenue per pupil is given in Appendix Table C. For any given year, the amount of state revenue per pupil in Appendix Table B added to the amount of local revenue per pupil in Appendix Table C should equal the total revenue per pupil in Appendix Table A, by state. As explained above, this table does not include federal aid. It is based on National Education Association estimates available as of August 1995.

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[16] *The statistical insignificance of the income tax variable probably reflects a tendency for states with high income taxes to reduce tax rates in order to avoid becoming uncompetitive with other states. Steven D. Gold, "Interstate Competition and State Personal Income Tax Policy in the 1980s," in Daphne A. Kenyon and John Kincaid,* Competition among State and Local Governments *(Washington, D.C.: The Urban Institute, 1991), pp. 205-217. The proportion of revenue from personal income taxes is, in any case, only a rough proxy for the elasticity of the state tax system, since it does not consider the tax rate structure, the existence of indexation, the degree of reliance on the sales tax and corporation income tax, and the composition of the sales tax base.*

[17] *Oregon voters approved an initiative in November 1990 that reduced the effective property tax rate from about 2.5 percent to 1.5 percent. Although it was not fully phased in during the period studied, it had a major effect on state and local finances, creating considerably more fiscal stress than would have existed otherwise. Nevada has an unusually high ability to export tax burdens to other states because of its large gaming industry. It is estimated that in 1986 tourists paid more than half of total state taxes. Robert D. Ebel, ed.,* A Fiscal Agenda for Nevada *(Reno: University of Nevada Press, 1990), pp. 184-185.*

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Appendix Table A. State and Local Revenue per Pupil 1982-83 to 1992-93, in 1992-93 Dollars

State	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93
Alabama	$2,030	$2074	$2,016	$2,551	$2,389	$2,699	$2,903	$2,906	$2,918	$3,165	$3,012	$3,106	$3,150	$3,257
Alaska	7,603	7,745	6,721	7,597	8,998	8,566	8,096	6,828	7,093	7,436	7,481	7,501	7,041	6,933
Arizona	3,141	3,426	3,474	3,350	3,197	3,178	3,921	4,224	4,359	4,419	4,409	4,433	4,486	4,449
Arkansas	2,473	2,519	2,606	2,606	2,819	3,014	3,168	3,068	3,288	3,329	3,469	3,455	3,730	3,842
California	4,018	4,113	4,084	3,900	4,236	4,466	4,745	4,827	4,914	5,169	5,185	5,035	5,050	5,051
Colorado	4,124	4,634	4,712	4,625	4,818	4,962	4,990	5,018	4,907	4,639	5,100	5,047	5,017	5,179
Connecticut	4,307	4,383	4,628	4,980	5,305	5,623	6,030	6,560	7,222	7,823	8,235	8,114	7,997	7,956
Delaware	4,547	4,635	4,796	4,815	4,996	5,190	5,352	5,400	5,474	5,604	5,751	5,701	5,685	5,720
Florida	3,326	3,609	3,858	4,017	4,319	4,405	4,633	4,827	5,064	5,181	5,474	5,498	5,313	5,265
Georgia	2,702	2,872	3,082	2,982	3,001	3,250	3,648	3,861	4,393	4,463	4,764	4,717	4,351	4,675
Hawaii	3,851	3,960	4,047	44,12	4,273	4,203	4,326	4,355	4,375	4,475	4,739	5,459	5,843	5,669
Idaho	2,909	2,908	2,937	2,783	3,064	3,034	2,997	3,072	3,151	3,197	3,354	3,534	3,596	3,547
Illinois	4,187	4,237	4,254	4,100	4,217	4,358	4,562	4,797	4,856	5,069	4,968	4,942	4,978	5,176
Indiana	3,188	3,839	3,716	3,488	3,849	4,264	4,173	4,418	4,349	4,937	4,734	5,585	5,200	5,555
Iowa	4,029	4,147	4,203	4,213	4,233	4,034	4,262	4,350	4,467	4,575	4,525	4,530	4,912	5,059
Kansas	4,078	4,094	4,521	4,545	4,633	4,819	4,915	4,757	4,802	4,848	5,010	5,049	4,960	4,969
Kentucky	2,804	2,803	2,777	2,954	3,116	3,042	3,079	3,410	3,561	3,461	3,566	4,090	4,411	4,344
Louisiana	3,047	3,270	3,654	3,569	3,572	3,606	3,597	3,288	3,387	3,585	3,803	3,801	3,885	3,884
Maine	3,043	3,064	3,306	3,436	3,593	3,725	3,951	4,383	4,806	5,078	5,570	5,467	5,386	5,587
Maryland	4,298	4,421	4,533	4,637	4,764	5,033	5,236	5,488	5,895	6,077	6,361	6,344	5,960	6,079
Massachusetts	4,781	4,781	4,725	4,770	4,855	5,149	5,452	5,798	6,192	6,442	6,506	6,409	6,385	6,289
Michigan	4,885	4,260	4,510	4,314	4,262	4,446	4,486	4,917	4,973	5,695	5,958	6,160	6,324	6,313
Minnesota	4,606	4,566	4,607	4,604	4,881	4,868	5,018	5,135	5,196	5,499	5,685	5,674	7,291	5,813
Mississippi	2,191	2,264	2,309	2,242	2,399	2,391	2,784	2,649	2,720	2,868	2,982	2,884	2,956	2,971
Missouri	3,232	3,378	3,382	3,522	3,732	3,698	3,866	4,163	4,471	4,527	4,673	4,775	4,649	4,667
Montana	3,910	4,204	4,803	4,698	4,857	4,824	4,866	4,646	4,557	4,497	4,645	4,956	4,924	4,798
Nebraska	3,711	3,448	3,572	3,686	3,752	3,811	3,920	4,055	3,945	4,050	4,348	4,562	4,412	4,537
Nevada	3,017	3,085	3,922	3,832	3,857	3,944	4,462	4,038	4,465	4,732	4,879	5,046	5,198	5,030
New Hampshire	3,341	3,539	3,769	3,879	3,944	4,136	4,371	4,697	5,157	5,646	5,826	6,060	5,951	5,864
New Jersey	5,044	5,271	5,622	5,932	6,254	6,527	6,912	7,312	7,742	8,120	8,511	8,840	9,180	9,297
New Mexico	3,377	3,439	3,877	3,959	3,865	4,143	4,080	4,082	3,967	4,025	4,102	4,148	4,157	3,980
New York	4,936	5,231	5,535	5,870	6,086	6,314	6,727	7,073	7,445	7,892	7,952	8,231	7,883	7,890
North Carolina	2,681	2,782	2,848	2,929	3,000	3,339	3,685	3,860	4,112	4,410	4,677	4,748	4,538	4,523
North Dakota	3,154	3,320	4,518	4,308	4,239	4,011	4,213	4,047	3,981	3,895	4,087	4,275	4,284	4,094
Ohio	3,605	3,399	3,559	3,906	4,011	4,184	4,267	4,079	4,140	4,961	5,108	5,123	4,744	4,968
Oklahoma	3,304	3,525	4,042	3,583	3,437	3,350	3,855	3,568	3,486	3,569	3,609	3,853	3,842	4,011
Oregon	4,354	4,664	4,654	4,861	4,824	4,854	5,057	5,064	5,027	5,153	5,086	5,387	5,390	5,636
Pennsylvania	4,375	4,438	4,657	4,821	5,017	5,425	5,657	5,761	5,901	6,245	6,974	7,007	6,913	6,912

Appendix Table A. State and Local Revenue Per Pupil 1982-83 to 1992-93, in 1992-93 Dollars

(continued)

State	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93
Rhode Island	4,105	4,154	4,449	4,438	4,930	5,151	5,386	5,545	5,791	6,228	6,433	6,244	6,188	6,001
South Carolina	2,645	2,699	2,725	2,857	3,037	3,544	3,633	3,735	3,908	4,013	4,242	4,474	4,364	4,418
South Dakota	2,965	3,373	3,513	3,560	3,496	3,488	3,573	3,644	3,601	3,634	3,824	3,859	3,874	3,962
Tennessee	2,546	2,592	2,628	2,629	2,574	2,859	3,011	3,107	3,186	3,250	3,333	3,323	3,296	3,500
Texas	3,263	3,383	3,734	3,890	3,935	4,392	4,394	4,375	4,288	4,214	4,215	4,452	4,652	4,867
Utah	3,204	3,158	3,255	3,265	3,163	3,339	3,319	3,206	3,102	3,051	3,119	3,135	3,203	3,338
Vermont	3,753	3,871	4,020	4,192	4,436	4,669	4,912	5,023	6,279	6,068	6,328	6,622	6,613	6,358
Virginia	3,299	3,446	3,537	3,750	3,943	4,130	4,490	4,665	4,950	5,065	5,228	5,304	5,141	5,132
Washington	3,848	4,413	4,182	4,138	4,298	4,400	4,368	4,684	4,817	4,970	5,219	5,439	5,526	5,696
West Virginia	3,061	3,12[illegible]	3,423	3,352	3,447	3,725	3,946	4,071	3,957	3,753	4,343	4,918	5,089	5,269
Wisconsin	4,197	4,239	4,397	4,577	4,532	4,903	5,015	5,200	5,367	5,542	5,729	5,907	6,015	6,160
Wyoming	4,681	5,060	6,549	7,815	7,984	7,870	7,810	7,344	6,565	6,386	6,187	5,876	6,128	5,766
National Average	3,780	3,874	4,017	4,076	4,211	4,417	4,614	4,738	4,877	5,105	5,251	5,353	5,348	5,396

Appendix Table B. Revenue per Pupil Provided by State Governments, 1982-83 to 1992-93, in 1992-93 Dollars

State	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93
Alabama	$1,532	$1,540	$1,495	$2,048	$1,875	$2,165	$2,329	$2,315	$2,273	$2,471	$2,312	$2,374	$2,357	$2,412
Alaska	6,045	6,290	5,414	6,213	7,199	6,669	6,207	4,974	5,167	5,417	5,446	5,464	5,124	5,045
Arizona	1,471	1,879	1,904	1,968	1,930	2,189	2,204	2,212	2,120	2,160	2,092	2,093	2,122	2,080
Arkansas	1,529	1,557	1,592	1,604	1,817	2,046	2,153	2,030	2,173	2,166	2,304	2,289	2,549	2,666
California	3,116	3,143	2,972	2,868	3061	3,236	3,514	3,606	3,586	3,739	3,712	3,596	3,618	3,446
Colorado	1,800	1,909	2,008	2,033	2,014	2,139	2,039	2,064	2,015	1,957	2,043	2,071	2,258	2,290
Connecticut	1,466	1,566	1,694	1,908	2,097	2,306	2,496	2,755	3,217	3,628	3,918	3,478	3,417	3,213
Delaware	3,382	3,483	3,521	3,575	3,723	3,861	3,995	4,029	4,102	4,163	4,189	4,231	4,152	4,158
Florida	2,115	2,229	2,218	2,349	2,506	2,523	2,649	2,741	2,903	2,863	2,991	2,946	2,771	2,784
Georgia	1,823	1,801	1,872	1,874	1,712	1,981	2,270	2,480	2,567	2,588	2,732	2,701	2,285	2,593
Hawaii	3,822	3,935	4,027	4,393	4,260	4,192	4,318	4,348	4,368	4,469	4,733	5,340	5,727	5,550
Idaho	1,767	1,863	1,958	1,827	2,127	2,055	2,026	2,023	2,095	2,084	2,207	2,384	2,431	2,379
Illinois	1,826	1,875	1,785	1,623	1,671	1,751	1,930	2,012	1,873	1,897	2,114	2,020	1,897	1,562
Indiana	1,920	2,132	2,146	1,895	2,144	2,629	2,530	2,696	2,609	2,876	2,872	3,083	2,903	3,056
Iowa	1,824	1,727	1,890	1,863	1,904	1,744	1,941	1,959	2,184	2,422	2,423	2,495	2,517	2,598
Kansas	1,897	1,963	2,007	2,041	2,119	2,226	2,277	2,132	2,179	2,226	2,328	2,340	2,240	2,611
Kentucky	2,234	2,234	2,178	2,332	2,443	2,353	2,375	2,655	2,785	2,655	2,729	3,113	3,353	3,280
Louisiana	1,874	1,978	2,222	2,161	2,121	2,226	2,204	2,034	2,059	2,114	2,246	2,326	2,419	2,399
Maine	1,647	1,625	1,784	1,850	1,964	2,031	2,189	2,475	2,632	2,852	3,144	2,983	2,882	3,079
Maryland	1,789	1,959	1,980	1,979	2,050	2,089	2,169	2,288	2,365	2,430	2,553	2,534	2,517	2,645
Massachusetts	1,858	1,857	1,848	1,861	2,029	2,302	2,413	2,768	2,757	2,776	2,362	2,498	2,141	2,260
Michigan	2,471	1,681	1,577	1,452	1,427	1,563	1,654	1,814	1,859	1,963	2,039	2,096	2,154	2,150
Minnesota	2,820	2,855	3,112	2,156	2,757	2,841	2,926	3,074	3,055	3,089	3,119	3,252	3,140	2,853
Mississippi	1,532	1,564	1,595	1,539	1,655	1,639	1,799	1,759	1,791	1,896	1,945	1,848	1,879	1,898
Missouri	1,315	1,443	1,429	1,421	1,450	1,448	1,590	1,739	1,842	1,884	1,957	1,960	1,857	1,865
Montana	2,107	2,077	2,289	2,488	2,683	2,631	2,565	2,430	2,347	2,301	2,323	2,380	2,257	2,843
Nebraska	671	1,155	1,142	1,200	1,172	1,123	1,094	1,045	1,013	1,033	1,266	1,751	1,896	1,862
Nevada	1,931	1,843	1,683	1,797	1,554	1,429	1,919	1,823	1,797	1,783	1,899	2,170	2,096	1,802
New Hampshire	287	292	297	324	246	211	288	286	404	467	480	467	500	494
New Jersey	2,039	2,096	2,183	2,477	2,637	2,803	3,083	3,264	3,453	3,686	3,673	3,514	4,094	4,028
New Mexico	2,568	2,655	3,184	3,382	3,296	3,547	3,510	3,490	3,396	3,446	3,491	3,543	3,527	3,468
New York	2,170	2,262	2,354	2,486	2,526	2,742	2,929	3,155	3,384	3,573	3,415	3,680	3,367	3,290
North Carolina	1,975	2,063	2,111	1,997	2,051	2,298	2,593	2,685	2,898	3,106	3,310	3,327	3,164	3,168
North Dakota	1,817	1,885	2,625	2,503	2,474	2,333	2,421	2,230	2,204	2,092	1,988	2,071	2,081	2,060
Ohio	1,756	1,447	1,482	1,800	1,868	1,992	2,055	2,143	2,116	2,306	2,331	2,320	2,187	2,294
Oklahoma	2,152	2,322	2,804	2,647	2,477	2,357	2,625	2,312	2,199	2,271	2,267	2,582	2,664	2,717
Oregon	1,717	1,643	1,716	1,526	1,472	1,459	1,469	1,473	1,431	1,454	1,482	1,480	1,788	2,324
Pennsylvania	2,151	2,158	2,211	2,307	2,393	2,614	2,725	2,810	2,856	2,926	3,374	3,393	3,220	3,129

Appendix Table B. Revenue per Pupil Provided by State Governments, 1982-83 to 1992-93, in 1992-93 Dollars (continued)

State	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93
Rhode Island	1,690	1,584	1,727	1,666	2,056	2,194	2,380	2,485	2,656	2,853	2,917	2,669	2,605	2,268
South Carolina	1,765	1,778	1,779	1,777	1,844	2,321	2,334	2,311	2,342	2,316	2,431	2,449	2,331	2,307
South Dakota	717	1,066	1,100	1,082	1,081	1,044	1,116	1,127	1,097	1,062	1,119	1,199	1,176	1,219
Tennessee	1,430	1,450	1,418	1,394	1,327	1,565	1,670	1,737	1,750	1,751	1,787	1,754	1,638	1,859
Texas	1,833	1,833	1,923	1,995	1,929	2,253	2,191	2,155	2,066	1,986	1,942	2,129	2,187	2,320
Utah	1,825	1,812	1,812	1,870	1,786	1,835	1,956	1,854	1,845	1,809	1,877	1,916	1,970	2,,084
Vermont	1,226	1,211	1,196	1,579	1,649	1,660	1,769	1,871	2,361	2,352	2,356	2,373	2,307	2,253
Virginia	1,492	1,223	1,203	1,301	1,387	1,440	1,681	1,723	1,832	1,844	1,900	1,976	1,794	1,853
Washington	2,980	3,390	3,361	3,258	3,380	3,459	3,448	3,677	3,733	3,809	4,027	4,244	4,299	4,380
West Virginia	2,058	2,116	2,389	2,279	2,356	2,636	2,749	2,831	2,743	2,540	3,082	3,580	3,705	3,817
Wisconsin	1,672	1,665	1,687	1,848	1,870	1,923	1,884	1,844	2,260	2,292	2,420	2,507	2,509	2,469
Wyoming	1,689	1,799	1,917	2,320	3,100	3,082	3,056	3,191	3,362	3,162	3,332	3,013	3,225	3,077
National Average	2,050	2,052	2,082	2,100	2,170	2,328	2,448	2,528	2,575	2,654	2,715	2,757	2,716	2,716

Appendix Table C. Revenue per Pupil Provided by Local Governments, 1982-83 to 1992-93, in 1992-93 Dollars

State	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93
Alabama	$498	$534	$521	$503	$514	$534	$574	$591	$645	$694	$700	$732	$793	$845
Alaska	1,558	1,455	1,307	1,384	1,799	1,897	1,889	1,854	1,926	2,019	2,035	2,037	1,917	1,888
Arizona	1,670	1,547	1,570	1,382	1,267	989	1,717	2,012	2,240	2,259	2,317	2,340	2,363	2,369
Arkansas	944	962	1,014	1,002	1,002	968	1,015	1,039	1,116	1,163	1,166	1,166	1,181	1,176
California	902	970	1,112	1,032	1,174	1,230	1,232	1,221	1,328	1,430	1,473	1,438	1,431	1,605
Colorado	2,324	2,726	2,704	2,592	2,804	2,824	2,951	2,954	2,893	2,682	3,057	2,976	2,759	2,889
Connecticut	2,841	2,817	2,934	3,072	3,208	3,317	3,534	3,805	4,005	4,195	4,318	4,636	4,580	4,743
Delaware	1,165	1,152	1,274	1,240	1,273	1,329	1,358	1,371	1,372	1,440	1,562	1,471	1,532	1,562
Florida	1,211	1,380	1,640	1,668	1,813	1,881	1,984	2,086	2,160	2,318	2,483	2,552	2,542	2,481
Georgia	880	1,071	1,210	1,108	1,289	1,269	1,378	1,381	1,826	1,875	2,032	2,016	2,066	2,082
Hawaii	29	25	20	19	14	11	9	7	6	6	6	119	116	119
Idaho	1,142	1,045	980	956	937	979	970	1,050	1,056	1,113	1,147	1,150	1,165	1,168
Illinois	2,360	2,362	2,470	2,477	2,546	2,608	2,631	2,785	2,983	3,172	2,854	2,922	3,080	3,614
Indiana	1,268	1,708	1,569	1,593	1,704	1,635	1,642	1,722	1,739	2,061	1,863	2,502	2,298	2,499
Iowa	2,205	2,421	2,313	2,349	2,330	2,290	2,321	2,390	2,283	2,153	2,102	2,034	2,396	2,461
Kansas	2,181	2,131	2,514	2,504	2,515	2,593	2,638	2,625	2,622	2,622	2,682	2,710	2,720	2,358
Kentucky	570	569	598	622	673	689	704	756	776	806	837	977	1,058	1,064
Louisiana	1,174	1,293	1,432	1,408	1,450	1,381	1,394	1,253	1,328	1,471	1,457	1,475	1,467	1,485
Maine	1,396	1,439	1,522	1,585	1,628	1,694	1,762	1,908	2,173	2,226	2,426	2,484	2,505	2,508
Maryland	2,509	2,462	2,553	2,658	2,713	2,945	3,068	3,200	3,529	3,647	3,809	3,810	3,443	3,435
Massachusetts	2,923	2,924	2,877	2,910	2,826	2,848	3,039	3,030	3,435	3,666	4,144	3,910	4,244	4,029
Michigan	2,414	2,579	2,933	2,862	2,835	2,884	2,832	3,103	3,114	3,732	3,919	4,065	4,170	4,163
Minnesota	1,786	1,711	1,495	2,449	2,125	2,027	2,091	2,061	2,141	2,410	2,566	2,421	4,152	2,960
Mississippi	659	700	713	703	744	752	985	890	929	972	1,037	1,036	1,078	1,073
Missouri	1,918	1,935	1,953	2,101	2,282	2,249	2,276	2,423	2,629	2,643	2,716	2,815	2,792	2,802
Montana	1,803	2,127	2,514	2,209	2,174	2,194	2,301	2,216	2,210	2,196	2,322	2,576	2,667	1,955
Nebraska	3,040	2,294	2,430	2,486	2,579	2,688	2,826	3,010	2,932	3,017	3,082	2,811	2,516	2,675
Nevada	1,086	1,242	2,239	2,036	2,303	2,516	2,542	2,214	2,669	2,949	2,980	2,876	3,101	3,228
New Hampshire	3,054	3,246	3,472	3,555	3,698	3,925	4,083	4,411	4,753	5,179	5,345	5,594	5,450	5,370
New Jersey	3,005	3,175	3,439	3,455	3,617	3,724	3,829	4,049	4,290	4,434	4,838	5,327	5,086	5,269
New Mexico	809	784	693	577	569	596	569	591	571	579	611	605	630	512
New York	2,765	2,969	3,181	3,384	3,560	3,572	3,797	3,918	4,062	4,319	436	4,551	4,516	4,600
North Carolina	706	720	737	932	949	1,041	1,092	1,175	1,214	1,304	1,367	1,421	1,374	1,355
North Dakota	1,337	1,435	1,894	1,805	1,766	1,678	1,792	1,818	1,777	1,803	2,099	2,204	2,203	2,034
Ohio	1,849	1,952	2,076	2,106	2,143	2,192	2,212	1,936	2,023	2,655	2,777	2,802	2,557	2,674

Appendix Table C. Revenue per Pupil Provided by Local Governments, 1982-83 to 1992-93, in 1992-93 Dollars (continued)

State	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93
Oklahoma	1,152	1,203	1,238	936	959	993	1,230	1,256	1,287	1,298	1,342	1,271	1,178	1,294
Oregon	2,637	3,021	2,938	3,335	3,352	3,395	3,587	3,591	3,595	3,699	3,604	3,907	3,602	3,312
Pennsylvania	2,224	2,280	2,445	2,515	2,624	2,811	2,932	2,950	3,045	3,319	3,600	3,615	3,693	3,783
Rhode Island	2,415	2,570	2,722	2,772	2,875	2,957	3,005	3,060	3,135	3,375	3,517	3,575	3,583	3,733
South Carolina	880	921	946	1,081	1,193	1,223	1,299	1,424	1,566	1,697	1,811	2,025	2,034	2,111
South Dakota	2,248	2,307	2,412	2,478	2,415	2,444	2,457	2,517	2,504	2,572	2,705	2,661	2,698	2,743
Tennessee	1,117	1,142	1,210	1,236	1,247	1,294	1,341	1,370	1,436	1,499	1,545	1,569	1,658	1,640
Texas	1,429	1,550	1,810	1,894	2,006	2,139	2,203	2,220	2,222	2,228	2,273	2,324	2,465	2,547
Utah	1,379	1,346	1,443	1,395	1,378	1,505	1,364	1,351	1,257	1,242	1,242	1,219	1,233	1,254
Vermont	2,527	2,660	2,824	2,612	2,787	3,009	3,143	3,152	3,918	3,716	3,972	4,249	4,306	4,105
Virginia	1,807	2,224	2,334	2,449	2,556	2,690	2,809	2,943	3,119	3,221	3,329	3,328	3,348	3,280
Washington	868	1,023	821	880	917	941	920	1,007	1,084	1,161	1,192	1,195	1,227	1,316
West Virginia	1,004	1,008	1,034	1,074	1,092	1,090	1,197	1,240	1,214	1,213	1,261	1,338	1,384	1,452
Wisconsin	2,525	2,574	2,710	2,729	2,662	2,981	3,131	3,355	3,107	3,251	3,309	3,400	3,506	3,691
Wyoming	2,992	3,261	4,632	5,495	4,884	4,789	4,754	4,153	3,203	3,224	2,855	2,863	2,903	2,689
National Average	1,730	1,822	1,935	1,976	2,041	2,089	2,166	2,210	2,302	2,451	2,37	2,596	2,632	2,680

CASE STUDIES

What really happens when a state raises taxes or establishes a lottery with the professed goal of increasing school revenue? How much does it actually help schools?

In order to answer these questions, we have examined a dozen situations in which states acted to improve school funding since 1982. Some of these states raised just the sales tax or the income tax, several increased both sales and income taxes, one established a lottery, and others took a variety of other actions. We also consider Virginia, a state that did not increase any state-level taxes but still was able to increase school revenue considerably.[18] In 3 of the 12 states, two distinct initiatives occurred, separated in time by five years or more.

The verdict is mixed. Some of the initiatives studied did little to help schools, while others were much more successful. We will generalize about their diverse experiences in the following chapter after reviewing the course of events in each state.

The 12 states studied are as follows:

Arkansas	1983	Sales tax
	1991	Sales tax
California	1984	Lottery
Indiana	1987	Income taxes
Kansas	1992	Income, sales taxes
Kentucky	1985	Business taxes
	1990	Income, sales taxes
Missouri	1993	Income taxes
Nebraska	1990	Income, sales taxes
South Carolina	1984	Sales tax
Tennessee	1984	Sales tax
	1992	Sales tax
Texas	1984	Various taxes
Vermont	1982	Sales tax
Virginia	1984	No tax increases

These states are not distributed evenly across the country. Five are in the Southeast (Arkansas, Kentucky, South Carolina, Tennessee, and Virginia), and three others border on that region (Kansas, Missouri, and Texas). Only four are in the remainder of the country (California, Indiana, Nebraska, and Vermont).

This geographic distribution is not a coincidence. The Southeast has had more than its proportionate share of activity related to school finance reform. An important reason for this is that many Southeastern states were particularly concerned that the deficiencies of their schools were a deterrent to economic growth.

Except for California and Vermont, all of the states in this study had below-average revenue per pupil (fall enrollment) before they undertook their school finance initiatives.[19] With a single exception (Kansas), all states had below-average revenue per pupil even when spending has been adjusted for differences in the cost of providing services among states.[20] The reason that low revenue states increased taxes more often is that they had to. Their economic development might have suffered otherwise.[21]

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[18] *Virginia did increase the state sales tax, but that was intended to be used solely for transportation projects.*

[19] *California was below the national average in revenue per pupil in average daily attendance in 1985.*

[20] *That is, Kansas's spending per pupil was above average in view of its relatively low costs. On the other hand, California's spending was below-average considering its high costs. Preliminary research for this booklet used cost of living adjustments developed by F. Howard Nelson of the American Federation of Teachers. For school finance data that rely on those estimates, see John Augenblick et al,* How Much Are schools Spending? *(Denver: Education Commission of the States, 1993). That report was very helpful in providing background for this booklet.*

[21] *Two states not included as part of the case studies, Mississippi and Oklahoma, fit the pattern as well. They increased taxes to improve school funding in 1982 and 1990, respectively. They both had particularly low levels of revenue per pupil before their tax increases.*

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Arkansas

Overview: Arkansas raised the sales tax twice, once by a cent in 1983 and again by a half-cent in 1991.

1983

History: In September 1983, Governor Bill Clinton proposed raising taxes by more than $150 million to improve funding of both elementary/secondary public schools and higher education. He proposed increasing the sales tax from 3 percent to 4 percent and extending it to some exempt services, raising about $150 million. He also called for increasing the severance tax on natural gas by an unspecified amount. This fiscal initiative was part of a reform program that included a controversial provision for testing teachers.[21]

The sales tax rate increase was enacted in November 1983, but the base was not expanded and the gas severance tax was not increased.

About the tax increase: The tax increase raised revenue $84 million in fiscal year 1984 and $163 million in fiscal year 1985.

Result: Real state revenue per pupil rose sharply the following year (1984-85), a 12.6 percent increase from $1,817 to $2,046, and it increased another 5.2 percent in 1985-86. But the uptrend then slowed. The total increase in the next five years was only 6.3 percent. (See Table 5.)

A legislative staff member reports that the 1983 tax increase was not formally earmarked for education, although "a good faith effort was made by all concerned to keep new revenue and school funding in balance."

Local revenue: Arkansas has a very restrictive property tax system in which school districts and other localities do not benefit from revaluation of property. If the assessed value of property increases due to a revaluation that is supposed to occur once every 10 years, the assessment ratio is lowered so that values are "rolled back" to eliminate the increase. This implies that local revenue increases depend on new construction of property and explicit tax rate increases.

Real local support per pupil fell 3.3 percent in the year when the big increase in school aid occurred (1984-85). It then increased at an average rate of about 5 percent over the next four years. Following this string of healthy increases, there were four consecutive years in which real local revenue per pupil either increased slightly or fell.

State share of school revenue: Arkansas has a centralized system of school finance. The state government share of state-local school revenue rose from 64.5 percent to 67.9 percent in 1984-85 but then gradually receded to 66.3 percent in 1990-91.

Conclusion: Real state-local revenue per pupil rose from 66.9 percent of the national average in 1983-84 to 68.2 percent the following year. By 1990-91 it had fallen to 64.5 percent of the national average. In other words, Arkansas ended up considerably further behind the average state than it had been before the 1983 tax increase.

The sales tax did not grow strongly once the boost from the 1983 tax increase had been absorbed. Schools were still poorly funded after this initiative, although if it had not occurred, the situation would have been even worse.

[21] Education Week *(September 28, 1983), p.8.*

1991

History: Reflecting the failure of the 1983 tax increase, Arkansas again raised the sales tax, this time by a half-cent, from 4 percent to 4.5 percent. It also extended the sales tax to used motor vehicles. (Note: Arkansas has an unusual constitutional provision requiring a three-quarters legislative majority to increase the personal income tax but only a simply majority to raise the sales tax. Governor Clinton indicated his preference for an income tax increase but recommended a sales tax increase because of the impossibility of obtaining enough legislative votes to increase the income tax.) An Educational Excellence Trust Fund was established to formally earmark the revenue from this sales tax increase for schools.

Result: Real state support again rose sharply the year after the sales tax increase (1991-92), growing 11.4 percent, the biggest increase since the year after the 1983 increase. But real local support per pupil increased only 1.2 percent that year, resulting in a total increase of 7.9 percent in real revenue per pupil. The following year real state aid per pupil rose another 4.6 percent but local revenue per pupil fell slightly.

A legislative staff member indicated that the 1991 tax increase, in contrast to the 1983 increase, really was dedicated to education spending.

State share of school revenue: The state share of state-local school revenue rose to 69.4 percent in 1992-93 from 66.3 percent two years earlier.

About the tax increase: The tax increase had several components. The largest part was the sales tax ($159 million). Other increases involved the corporation income tax ($13 million), the cigarette tax ($3 million), and motor fuel taxes ($87 million). To offset the regressivity of these tax increases, Arkansas raised the threshold below which taxpayers are exempt from the income tax, costing the state $14 million.

Despite the 1991 tax increase, Arkansas experienced a fiscal crisis in 1992. It raised taxes at a special session in December 1992, shortly after Jim Guy Tucker assumed the governorship following the election of Bill Clinton as President.

Table 5
School Revenue per Pupil in Arkansas, 1984 to 1993
(in 1993 dollars)

Year	State	Local	Total	Percentage change		
				State	Local	Total
1983-84	$1,817	$1,002	$2,819			
1984-85	2,046	968	3,014	12.6%	-3.3%	6.9%
1985-86	2,153	1,015	3,168	5.2	4.8	5.1
1986-87	2,030	1,039	3,068	-5.7	2.3	-3.1
1987-88	2,173	1,116	3,288	7.0	7.4	7.2
1988-89	2,166	1,163	3,329	-0.3	4.2	1.2
1989-90	2,304	1,166	3,469	6.4	0.2	4.2
1990-91	2,289	1,166	3,455	-0.7	0.1	-0.4
1991-92	2,549	1,181	3,730	11.4	1.2	7.9
1992-93	2,666	1,176	3,842	4.6	-0.5	3.0

General conclusion for both years: Arkansas' real state-local school revenue per pupil rose faster than the national average between 1983-84 and 1992-93 (36.3 percent vs. 28.1 percent). Revenue per pupil increased from 66.9 percent to 71.2 percent of the national average. But it required two tax initiatives to produce this result. As explained above, in 1990-91, seven years after the 1983 increase, Arkansas was further behind the national average than it had been in 1983-84. There were two problems; local revenue rose relatively little (only 17.4 percent compared to a 46.7 percent increase for state revenue, from 1983-84 to 1992-93), and the heavy reliance on the sales tax was undesirable because of its relatively low income elasticity.

California

History: On November 6, 1984, Californians approved a voter initiative to establish a state lottery, with revenue dedicated to public elementary/secondary schools and higher education. The initiative was sponsored by Californians for Better Education, a non-profit corporation that received considerable financial support from Bally Corporation.[23]

Official estimates were that once it was fully operational, the lottery would produce $500 million annually for education after payment of prizes and administrative costs. Yield in the first two years would be less. It was expected that 80 percent would go to K-12 schools, 13 percent to community colleges, 5 percent to California State University, and 2 percent to the University of California.[24]

Result: Lottery revenue was higher than the $500 million predicted; in its first year, for example, schools received $689 million, and in 1987-88, $804 million.[25] However, as Table 6 shows, the revenue was volatile, fluctuating considerably from year to year. It was also only a small proportion of total general purpose school revenue, never exceeding 4 percent.

Another problem relates to the premise that lottery revenue would not supplant other funding for schools. This was a stipulation of the voter-approved initiative. In fact, real per pupil school spending rose $279 in 1985-86, the first year in which schools received lottery revenue.[26] That was a bigger increase than in any other year since at least 1977-78. The following year, the increase was only $82, and the next year (1987-88), real per pupil spending decreased.[27] Schools have continued to receive meager revenue increases since then when inflation and enrollment growth are taken into account. From 1988-89 to 1992-93, real state-local revenue per pupil fell 2.3 percent.

The impact of the lottery is complicated by the weak performance of the California economy in the 1990s, resulting in severe state budget problems, and by adoption of Proposition 98 in 1988 and Proposition 111 in 1990, which were intended to guarantee that a fixed share of the state budget would go to K-14 education. In any case, one conclusion appears clear—that funding of schools in California has fared very poorly (along with most other state programs), and lottery revenue made little if any difference.

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[23] Education Week *(May 30, 1984), pp. 1, 17.*

[24] *"Official Summary Prepared by Attorney General. Lottery proponents predicted that revenue for schools would be $668 million.* Education Week *(May 30, 1984).*

[25] *Eric Hartwig, "Do Our Schools Win, Too?" (Policy Analysis for California Education, 1987); Murdoch, Mockler, and Associates,* Analysis of Lottery Expenditure Report by Educational Segment *(June 1989).*

[26] *Unlike in other sections of this report, this statement relates to spending rather than revenue because it is drawn from a case study of the lottery's effect on school spending conducted in California published in 1989.*

[27] *Murdoch, Mockler, and Associates,* Lottery Expenditure Report.

Table 6
California Lottery Revenue, 1985-1994

Year	Per pupil revenue	As % of total K-12 revenue
1985-86	$125.67	3.36%
1986-87	91.31	2.23
1987-88	140.74	3.24
1988-89	178.64	3.95
1989-90	162.65	3.46
1990-91	129.27	2.57
1991-92	77.09	1.57
1992-93	92.51	1.88
1993-94 (est.)	100.24	1.96

Notes: Pupils are measured by average daily attendance. Revenue is total K-12 general purpose revenue.

Source: California Teachers Association, 1994-95 State Budget Report (July 1994).

Indiana

History: Responding to proposals by Governor Robert D. Orr, Indiana's legislature approved a school reform package that included tax increases for schools in an April 1987 special session. The rate of the personal income tax was raised from 3 percent to 3.4 percent, and the state's two corporate income taxes were also both increased. (One is called the corporate adjusted income tax, and the other is the supplemental net income tax.) The governor's proposal to extend the sales tax base to include professional services while lowering the sales tax rate was rejected.

The tax increases were expected to raise $750 million over the next biennium. State spending on precollegiate education was projected to increase $808 million during that period.[28]

Result: Schools received considerably more revenue from this reform. The major expenditure was the addition of five days to the school year. As Table 7 shows, real state support per pupil rose 5.3 percent in 1988 and 5.6 percent in 1989.[29] Gains in the next four years fluctuated between 2.8 percent and 6.5 percent per year. Real local support per pupil also increased substantially, with growth varying from 2.2 percent to 9.4 percent annually in the six years after the finance reform was adopted. The 1987 legislation required local school districts to increase their own effort rather than rely completely on increased state revenue.

As a result of the double-barreled revenue increases, real state-local revenue per pupil increased substantially, growing 29.5 percent over the six years following the 1987 tax increases. Indiana's state-local revenue per pupil went from 91.9 percent of the national average in 1986-87 to 104.5 percent of the national average in 1992-93.

About the tax increases: In fiscal year 1988, the tax increases were expected to raise $358 million,

[28] Education Week *(May 13, 1987), p.11.*

[29] *Revenue data were obtained by the Indiana Legislative Services Agency from the Indiana Department of Education and have been used rather than NEA revenue data. Revenue in Table 7 is reported for calendar years rather than fiscal years.*

which consisted of the following elements: personal income tax rate increase, $197 million; retention of "windfall" resulting from federal tax reform, $50 million;[30] corporation income tax increase, $63 million; and 5-cent cigarette tax increase, $30 million. (The cigarette tax increase was not for education. It was earmarked for social programs such as food supplements for infants, women, and children.) The rate of the adjusted gross corporate income tax was raised from 3 percent to 3.4 percent, and the rate of the supplemental net income tax was boosted from 4 percent to 4.5 percent.[31]

Conclusion: Indiana's school finance initiative successfully increased school revenues. Two features that contributed to its success were reliance on the income tax and insistence that local revenue increase in tandem with state revenue.

Table 7
School Revenue per Pupil in Indiana, 1987 to 1993
(in 1993 dollars)

Year	State	Local	Total	Percentage change		
				State	Local	Total
1987	$2,192	$2,164	$4,355			
1988	2,309	2,217	4,526	5.3%	2.5%	3.9%
1989	2,437	2,266	4,702	5.6	2.2	3.9
1990	2,506	2,343	4,847	2.8	3.4	3.1
1991	2,615	2,564	5,179	4.4	9.4	6.8
1992	2,786	2,720	5,506	6.5	6.1	6.3
1993	2,871	2,769	5,639	3.0	1.8	2.4

Note: This table was derived from information provided by the Indiana Office of Legislative Services.

[30] *The windfall resulted from broadening the tax base. Indiana had a relatively small windfall because it does not allow itemized deductions on its personal income tax. It did, however, benefit from the repeal of the exclusion of 60% of long-term capital gains and certain other changes.*

[31] *The effective tax rate on corporate net income was raised from 6.88% to 7.75%, according to Diane Powers, an official of the Legislative Services Agency. Steven D. Gold, Corina L. Eckl and Brenda M. Erickson,* State Budget Actions in 1987 *(Denver: National Conference of State Legislatures, 1987).*

Kansas

History: In May 1992, Kansas enacted a school finance reform that represented a compromise between Governor Joan Finney and the legislature. They were responding to a crisis touched off by a district court judge who indicated that he planned to declare the existing school finance system unconstitutional.

The reform raised the state sales tax 0.65 cent, reformed the personal income tax (increasing revenue overall while cutting taxes for most taxpayers with income under about $45,000), and increased the corporation income tax. In addition, it created a uniform general fund school property tax in place of the variable rate local property taxes that had formerly been levied. The state tax increase was estimated to raise $349 million in 1993.[32] The biggest share of the revenue was obtained by increasing the sales tax rate from 4.25 cents to 4.9 cents ($152 million in fiscal year 1993). Another $70 million was from broadening the sales tax base, especially to certain telephone calls, original construction labor services, and utilities consumed in the production process. (The latter two services were taxed at a 2.5 percent rate rather than the 4.9 percent rate of the general sales tax.) Finally, the corporation income tax was raised to yield an additional $7 million.[33]

Result: The new school aid formula was phased in over two years. School aid rose sharply in the two years after the reform, growing 71.0 percent. This additional revenue was divided about evenly between property tax relief and increased school spending, with property tax levies falling $228.8 million and general fund spending increasing $260.1 million. The result was a 29.1 percent decrease in property tax collections and a 14.6 percent rise in general fund school spending. After taking inflation and enrollment growth into account, real spending per pupil rose 5.2 percent. As a result of this reform, the state share of school revenue rose from 43.9 percent to 65.4 percent.

All of the revenue from the state tax increase was earmarked for schools because of a concern that otherwise the bill would violate the requirement that bills deal with only a single subject (i.e., school reform and taxes were tied together by the earmarking). The earmarking was repealed the following year.

About the tax increase: The sales taxes on utilities and original construction labor services did not produce as much as projected. The tax on construction services had been expected to raise $40 million, but it produced only about $4 million the first year, $12 million the second year, and $18 million in 1995. Much of the shortfall was because of lack of familiarity with the new tax that led to low compliance. Both it and the tax on utilities were repealed in 1995.

The new statewide property tax represented a decrease in all but a few districts. In 1993-94, the decrease was $228.8 million, although property taxes are increasing now following the initial decrease. The school district general fund tax rate was originally 32 mills but increased to 35 mills in 1994. Although required by the state, the tax was construed to represent the local contribution to school costs. However, a judge ruled in 1994 that it is a state tax. The legislature must therefore reenact it every two years because of a constitutional interpretation that a state property tax can continue for only two years (unless it is specifically authorized in the state constitution).

Conclusion: It is still too soon to judge the

[32] Education Week *(May 20, 1992), p. 20.*

[33] *Corina L. Eckl and Scott R. Mackey,* State Tax Actions in 1992 *(Denver: National Conference of State Legislatures, 1992), p. 23.*

long-run effects of the 1992 tax reform, but it clearly has succeeded in the short run in lowering property taxes in many jurisdictions and increasing the state share of schools costs. Although revenue from broadening the sales tax base fell considerably short of original projections, this revenue shortfall was offset by the fact that the state spending needed to implement the plan was overestimated. Enrollment grew less than expected, the assessed value of property increased more than projected, and revenue from motor vehicle taxes (another important source of school revenue) was higher than estimated, all of which reduced the cost of the reform to the state budget.

Kentucky

Overview: Kentucky had two initiatives. The first one, in 1985, relied solely on increasing business taxes. It produced disappointing results. The second, much larger reform, in 1990, increased the personal and corporate income taxes and the general sales tax.

1985

History: Governor Martha Layne Collins and the legislature developed a school reform program that was financed by increases in the corporation income tax and corporate license fees. It was notable that leaders of the business community supported raising business taxes because they believed it to be important to improve school funding.

Result: Real state support per pupil jumped 11.8 percent in 1986-87 and rose 4.9 percent in the following year but fell 4.7 percent in 1988-89 and increased just 2.8 percent in 1989-90. (See Table 8.) Real local support per pupil also increased sharply in 1986-87 (7.4 %) but considerably less in the next three years (2.6 %, 3.9%, and 3.9 %). Thus, real state-local revenue per pupil had fairly strong increases for two years (10.8 % and 4.4 %) followed by little additional gain. As a result, Kentucky's real state-local revenue per pupil rose only from 66.7 percent of the national average in 1985-86 to 67.9 percent in 1989-90.

State share of state-local revenue: Kentucky has one of the largest state roles in funding schools. In 1989-90, the state contributed 76.5 percent of state-local school revenue, slightly less than the 77.1 percent provided in 1985-86.

About the tax increases: The major tax change was an increase in the corporate income tax rate for income above $250,000. Along with other changes in this tax (involving depreciation allowances and double weighting of sales in apportioning income among states), this was expected to raise $65 million in fiscal year 1987, its first full year in effect. Corporation licenses were also increased, and the sales tax was imposed on equipment leases and rentals; these two changes were expected to produce a total of $53 million additional revenue in fiscal year 1987. These gains were offset by exemption of most inventories from the property tax and an inheritance tax reduction. The net increase in revenue from all of these changes was estimated to be $88 million in fiscal year 1987 but only $77 million in fiscal year 1988.[34]

1990

History: The Kentucky Supreme Court declared the school finance system to be unconstitutional in the late 1980s, and the state responded with a far-reaching set of reforms that were adopted in 1990. Governor Wallace G. Wilkinson said that he did not want to raise taxes, although he would agree to closing loopholes, so he proposed a large revenue increase that did not raise tax rates. For the income

[34] *Steven D. Gold, Corina L. Eckl, and Max Price*, State Budget Actions in 1985 *(Denver: National Conference of State Legislatures, 1985).*

Table 8
School Revenue per Pupil in Kentucky, 1986 to 1993
(in 1993 dollars)

Year	State	Local	Total	Percentage change		
				State	Local	Total
1985-86	$2,375	$704	$3,079			
1986-87	2,655	756	3,410	11.8%	7.4%	10.8%
1987-88	2,785	776	3,561	4.9	2.6	4.4
1988-89	2,655	806	3,461	-4.7	3.9	-2.8
1989-90	2,729	837	3,566	2.8	3.9	3.0
1990-91	3,113	977	4,090	14.1	16.7	14.7
1991-92	3,353	1,058	4,411	7.7	8.3	7.8
1992-93	3,280	1,064	4,344	-2.2	0.6	-1.5

tax, he proposed repealing the deduction of federal income tax payments and conforming to federal base-broadening provisions that most other states had already adopted.[35] For the sales tax, he proposed elimination of the exemption of business purchases of services.

The legislature agreed to the income tax proposal but raised the sales tax rate one cent (from 5 cents to 6 cents) instead of changing the sales tax base. The corporation income tax rate was also increased. The total tax increase was estimated to be $638 million in fiscal year 1991 and $595 million in fiscal year 1992, representing nearly a 15 percent increase in annual state tax revenue.[36] In addition to the state tax increase, local effort was raised as part of a new foundation aid program that set a floor under the property tax rate.

Result: Real *state* support per pupil rose sharply in the years after the tax increase, increasing 14.1 percent in 1990-91 and 7.7 percent in 1991-92, but then it fell by 2.2 percent in 1992-93. Real local support per pupil increased even more, rising 16.7 percent in 1990-91, 8.3 percent in 1991-92, and 0.6 percent in 1992-93. Real state-local revenue per pupil rose 14.7 percent in 1990-91 and 7.8 percent in 1991-92 but decreased 1.5 percent the following year.

By 1992-93, real state-local spending per pupil was 80.5 percent of the national average, a substantial increase from 67.9 percent three years earlier.

About the tax increase: The personal income tax revisions accounted for the largest part of the tax increase; in 1991 they were expected to produce $372 million by repealing the federal tax deduction and $120 million by conforming to the Internal Revenue Code. The sales tax increase was projected to raise $187 million, and the corporation income tax increase to bring in $30 million in that year. However, a new low-income tax credit to alleviate the regressivity of the tax increase was expected to cost $60 million.[37]

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[35] *Baseboardening involved elimination of deductions such as those for sales taxes and consumer interest payments and elimination of exclusions such as 60% of long-term capital gains and IRA contributions for high-income returns. Kentucky had not conformed to personal income tax provisions of the 1986 Tax Reform Act, as all other states with income taxes based on the Internal Revenue Code had done in 1987 or shortly thereafter. A few states do not tie their income taxes to the federal income tax, so they did not face a decision about conforming.*

[36] Education Week *(April 4, 1990), pp.1, 34-35.*

[37] *Corina L. Eckl, Anthony M. Hutchison, and Ronald K. Snell,* State Budget and Tax Actions in 1990 *(Denver: National Conference of State Legislatures, 1990). p. 59. An additional $35 million was raised from higher motor vehicle taxes.*

State tax revenue turned out to be considerably less than projected in the years after the 1990 tax increases. The shortfalls over the first two fiscal years after the tax increases took effect were about $150 million for the personal income tax, $110 million for the corporate income tax, and $32 million for the sales tax. These shortfalls were not solely due to errors in estimating the effects of the tax increases. The national economic recession, which hit Kentucky fairly hard, was also a major factor. Even after the recession, however, revenue trailed significantly behind projections, causing some curtailment of planned education spending increases, for example, for education technology.

Conclusion: Kentucky's 1990 tax increase was much more successful than the 1985 one, but it still left the state with a relatively weak tax system. It did not broaden the sales tax base, nor did it raise personal income tax rates. Because the top tax rate of 6 percent takes effect at the $8,000 income level, the elasticity of the income tax is relatively low. As a result, revenue growth after the initial rise following the 1990 tax increases has not been sufficient to fund large increases in school aid.[38]

Missouri

History: In 1993 the Missouri legislature voted to raise the personal and corporation income taxes and the cigarette tax to increase school spending. Many voters were not affected by the personal income tax increase because it took the form of a limitation on the amount of federal income tax payments that could be deducted on state returns. The limit—$10,000 on joint returns and $5,000 on single returns—was so high that large numbers of voters did not have to pay more state taxes as a result.

Result: This initiative is so recent that it has affected schools for only one year so far. The state appropriation for school aid rose 19.2 percent in fiscal year 1995.[39] The school aid increases are being phased in over a four-year period. In the 1995-96 school year they were three-quarters in effect. In order to reach that level, in its 1995 session the legislature adopted the governor's recommendation for an increase of $189 million, over twice the 1993 projected increase, for fiscal year 1996.

About the tax increase: The total increase was estimated to be $310 million in fiscal year 1995, including $205 million from the personal income tax and $80 million from the corporate income tax.[40] The remainder was from gaming taxes. By fiscal year 1997, the increase could exceed $400 million.[41]

Missouri's income tax increase was highly progressive because of the way it was designed. Because the federal income tax is progressive, allowing state taxpayers to deduct federal payments disproportionately benefits high-income voters. Therefore, limiting the deduction to $10,000 for joint returns results in large state tax increases for the affluent while not imposing any burden on most taxpayers. While this deduction was fairly common at one time, many states have repealed it since 1985.[42]

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[38] *Kentucky postponed facing the implications of weak revenue growth in 1993 by delaying the payment of income tax refunds until July, shifting them to a later fiscal year than normal.*

[39] *Corina L. Eckl, Karen Carter, and Arturo Perez,* State Budget and Tax Actions in 1994 *(Denver: National Conference of State Legislatures, 1994), p. 22.*

[40] *Scott R. Mackey,* State Tax Actions in 1993 *(Denver: National Conference of State Legislatures, 1993), p. 25, reported that the increase was $106 million in fiscal year 1994. However, this was less than half of the total increase because the tax changes did not take effect until the fiscal year was half over.*

[41] *Memo from E.C. Walker of the Missouri Education Association (April 13, 1995). Walker also noted that when the legislature voted for the tax increases in 1993, it provided for a referendum to be held in November 1993, if certain contingencies occurred (related to a pending Supreme Court ruling that declared the previous school finance system to be unconstitutional). The referendum was not held because the stipulated circumstances did not exist.*

[42] *Only four states still allow a full deduction for federal income taxes—Alabama, Iowa, Louisiana, and Montana.*

Nebraska

History: In 1990, Nebraska raised its sales and income taxes $202 million to increase school aid. The sales tax was increased from 4 to 5 percent, and the personal and corporate income taxes were each raised by 17.5 percent.

But rather than increasing school spending, the reform was intended to shift reliance away from the property tax, raising the state share of school revenue from 23 to 45 percent. (Only New Hampshire had a lower state share before the tax increase.) The measure placed limits on the allowable growth of school spending of 4 to 6.5 percent, assuring that the school aid increases did not result in higher spending rather than lower property taxes. This reform was passed over the veto of Governor Kay A. Orr.[43]

Result: Tracking the impact of Nebraska's finance reform is complicated by its unusual policy in the year before it took effect. In the 1989-90 school year, the state used a large accumulated budget surplus to provide a one-time state-financed property tax exemption for all property. In other words, the state paid part of everyone's property tax bill. As a result, state support for schools rose sharply (22.6 percent). According to a legislative staffer, this action anticipated a major school finance reform the following year and implicitly made the reform more likely.[44]

[43]Education Week *(March 28, 1990), p. 12. The limits were imposed on school district spending, with higher allowable growth in low-spending districts.*

[44]*Because of the unusual 1989-90 policy, a study of the reform conducted by consultants Augenblick, Van de Water and Myers used 1988-89 as the year in which its analysis started. Augenblick, Van de Water and Myers,* An Evaluation of LB1059 and Its Impact on School Districts in Nebraska *(submitted to Nebraska School Finance Review Committee, March 1994).*

[45]Annual Report of the Nebraska School Finance Review Committee: 1994, *vol. 1, pp. F-1, F-2, F-10; in January 1992, the Legislative Fiscal Office reported that revenue had been over-estimated by 3%.* Annual Report of the Nebraska School Finance Review Committee: 1992, *Attachment C.*

The year after the reform occurred, real state school aid per pupil rose 38.4 percent and real local revenue per pupil fell 8.8 percent, resulting in a net increase of school revenue of 4.9 percent. The next year, real state aid per pupil rose another 8.3 percent while local revenue per pupil fell 10.5 percent. But in the following year, the patterns shifted, as real state aid per pupil fell 1.8 percent and real local revenue per pupil rose 6.3 percent (see Table 9).

The net result was that total state-local school revenue per pupil in 1992-93 was slightly lower than it had been two years earlier. It was still 12 percent higher than it had been four years earlier. Over the four years, real state aid per pupil jumped 80.3 percent while real local revenue per pupil fell 11.3 percent.

State share of state-local revenue: Although the goal was to increase the state share of revenue to 45 percent, in 1994-95 it was only 40.8 percent. This shortfall occurred for two reasons: education spending rose more than projected, and state revenue increased somewhat less than projected. The projections used when the reform was enacted assumed that newly imposed spending limitations would slow the growth rate of spending from its trend increase of 5.6 percent (based on 1983 through 1988) to 5 percent. In fact, education spending increases did not slow but actually accelerated somewhat; state revenue was somewhat overestimated, and state aid rose somewhat less than projected.[45]

The reform did lower property taxes. Between 1990 and 1992, the average tax rate for school districts offering K-12 programs fell from $1.58 to $1.26 per $100 of equalized assessed value. Many homeowners, however, were dissatisfied with the 1990 reform because they saw little benefit in their property tax bills. Numerous cities revalued property in the early 1990s, resulting in consider-

ably larger increases in assessments for homes than for businesses. This resulted in a shift of tax burdens to residential property, offsetting the tax savings resulting from the increase in state aid. As of early 1995, there is still great popular dissatisfaction with school property taxes. Besides, the average tax rate rose after 1992, reaching $1.34 in 1994.[46]

In order to preempt support for extreme voter initiatives expected to be on the ballot in 1996, strong consideration is being given to development of more moderate initiatives that would further increase state taxes to reduce reliance on the property tax.

About the tax increase: The sales tax accounted for more than half of the tax increase, raising $116 million in fiscal year 1991. The personal income tax contributed $76 million and the corporate income tax $10 million. (Corporate income tax revenue came in a year later than that from the other tax increases.[47])

Conclusion: Nebraska's situation is different from that in the other states studied (with the partial exception of Kansas) because its goal was not to increase school spending but rather to cut property taxes. Even after the major state tax increase, Nebraska still had above-average property tax burdens. The 1990 reform was a substantive success because it did shift reliance away from the property tax, but it was not a political success in that it failed to douse the flame of property tax unrest.

Table 9
School Revenue per Pupil in Nebraska, 1989 to 1993
(in 1993 dollars)

Year	State	Local	Total	Percentage change		
				State	Local	Total
1988-89	$1,033	$3,017	$4,050			
1989-90	1,266	3,082	4,348	22.6%	2.1%	7.3%
1990-91	1,751	2,811	4,562	38.4	-8.8	4.9
1991-92	1,896	2,516	4,412	8.3	-10.5	-3.3
1992-93	1,862	2,675	4,537	-1.8	6.3	2.8

[46] Annual Report: *1994, p. C-1.*

[47] *Eckl, et al,* State Budget and Tax Actions in 1990, *p. 61.*

South Carolina

History: In June 1984, Governor Richard W. Riley approved a $214 million "Education Improvement Act" that increased the state's funding for elementary-secondary education as part of a 5-year program to improve schools. Most of the revenue for the program was to come from a 1-cent increase in the state sales tax, which was expected to raise $195 million in the first year. Additional support was to be provided by $17 million from the state's budget surplus and $2 million from earnings on the state's interest fund.[48]

The bulk of the added spending was for teacher salaries ($60 million), remedial education for children failing a basic schools exam ($60 million), and capacity improvements ($60 million). Among the reforms supported were experimentation with merit pay systems, financial incentives for schools with achievement gains, and measures intended to increase involvement of parents in school activities.[49]

The reform included an effort maintenance provision that prevented local school districts from cutting back their financial support and in fact required that it be increased each year by an inflation factor determined by the state.

Result: As Table 10 shows, real *state* support per pupil had a huge increase in 1984-85 (25.9 percent), but it rose relatively little thereafter. However, real *local* support per pupil rose steadily and substantially for many years. In 1984-85, when state support soared, local support per pupil rose only 2.6 percent, but in the following five years, increases ranged from 6.2 percent to 11.8 percent per year. Local support per pupil rose only slightly in the next two years. However, a backlash occurred against the large property tax increases. In 1995, South Carolina cut property taxes $200 million. Net education aid was increased about half as much as usual, and property tax relief was financed by an across-the-board 5 percent cut in other state spending.[50]

Real state-local school revenue per pupil rose much more strongly than in most other states in the seven years after the 1984 reform was enacted. This occurred because of large increases in the 1985, 1988, 1990, and 1991 school years, with moderate increases in the other three years (2.5 to 2.8%), with no years having decreases.

The good times ended in the 1992 school year, when real state-local revenue per pupil fell 2.5 percent, and only about half of this decrease was recouped in 1993.

Despite the setbacks in 1992 and 1993, real pupil revenue rose significantly compared to the national average. In 1983-84, state-local revenue per pupil was 72.1 percent of the national average. By 1990-91, it was 83.6 percent of the national average. As a result of subsequent slippage in 1992 and 1993, it fell to 81.9 percent of the national average. It has apparently continued to fall since then.

Earmarking: The Education Improvement Act Fund (mainly funded by the one-cent sales tax) produced $217.3 million when first adopted in 1984. Because of inflation and the growth of spending, it was expected to produce $350.0 million in 1994-95. The revenue from the sales tax

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[48] *The revenue from the sales tax increase was partially offset by two tax cuts that Governor Riley accepted in order to obtain business support for the sales tax increase—elimination of the merchant's inventory tax and a $300 limit on the sales tax for automobile purchases.*

[49] Education Week *(August 22, 1984), p. 30.*

[50] *South Carolina enacted a $100,000 homestead exemption for school operating levies. This means that school property taxes for operations are eliminated for homes worth less than $100,000, and that amount is subtracted from the assessment in calculating taxes for more expensive homes. In effect, the state government will pay for this exemption. However, most of the cost of the exemption will be covered by lower state spending, part of which includes a reduction in school aid.*

Table 10
School Revenue per Pupil in South Carolina, 1984 to 1993
(in 1993 dollars)

Year	State	Local	Total	Percentage change		
				State	Local	Total
1983-84	$1,844	$1,193	$3,037			
1984-85	2,321	1,223	3,544	25.9%	2.6%	16.7%
1985-86	2,334	1,299	3,633	0.5	6.2	2.5
1986-87	2,311	1,424	3,735	-1.0	9.6	2.8
1987-88	2,342	1,566	3,908	1.4	10.0	4.6
1988-89	2,316	1,697	4,013	-1.1	8.3	2.7
1989-90	2,431	1,811	4,242	4.9	6.7	5.7
1990-91	2,449	2,025	4,474	0.7	11.8	5.5
1991-92	2,331	2,034	4,364	-4.8	0.4	-2.5
1992-93	2,307	2,111	4,418	-1.0	3.8	1.2

did not, however, grow as much as had been anticipated in 1984. Shortfalls resulted in smaller allocations for construction of school buildings.[51]

Although education certainly benefited from the tax increase, much of the revenue from it was diverted to other programs. The year before the Education Improvement Act was passed, elementary-secondary schools received 37.6 percent of state general fund revenue. This proportion rose at first after 1984 but then began to decrease. In 1994-95, schools received just 31.9 percent of the general fund. If the revenue from the penny sales tax is added to general fund revenue, the share is approximately 37.4 percent, virtually the same as it was 11 years earlier.

This experience is consistent with the prediction in *Tax Options for States Needing More School Revenue* that schools would benefit from new earmarked taxes by receiving about the same share of revenue from them that they were already receiving as a proportion of the state budget.[52]

About the tax increase: The tax rate increase was projected to raise $214 million in fiscal year 1985, but $32 million was devoted to funding a new tax credit of $12.50 per person to reduce the regressivity of the sales tax on food. The credit was repealed after one year as part of a reform and simplification of the personal income tax.[53]

State share of school revenue: The share of school revenue provided by the state government jumped from 60.7 percent in 1983-84 to 65.5 percent in 1984-85, but then it fell in each of the next seven years until it reached 52.2 percent in 1992-93.

Conclusion: South Carolina's reform was a relative success. State-local revenue per pupil rose considerably closer to the national average between 1983-84 and 1992-93. This was less due to the heralded sales tax increase than to the substantial increase in local property taxes.

[51] *Memorandum to the author from Mary M. Greene of the South Carolina Education Association (December 14, 1994).*

[52] *Steven D. Gold,* Tax Options for States Needing More School Revenue *(Washington, D.C.: National Education Association, 1994), p. 54.*

[53] *The income tax reform, which conformed the state tax base to federal taxable income, helped poor people by sharply increasing the personal exemption and standard deduction, more than offsetting the repeal of the tax credit. Steven D. Gold and Corina L. Eckl,* State Budget Actions in 1984 *(Denver: National Conference of State Legislatures, 1984), p. 37.*

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Perspective: South Carolina formerly had particularly low property taxes. As a proportion of personal income, property tax revenue in 1984 was only 2.3 percent. By 1992, it had risen to 2.9 percent of personal income. Thus, South Carolina took advantage of its underutilization of the property tax, an option that is not as readily available to states that already have high property taxes.[54]

As mentioned above, the property tax increase eventually produced a significant backlash from local taxpayers, generating support for a property tax rollback in 1995. South Carolina's reform appeared much more successful in 1990 than it does now. It turned out to be unsustainable. Schools have already lost some of the gains they made in the 1980s, and further slippage seems likely.

Tennessee

Tennessee raised the sales tax twice, in 1984 and 1992.

1984

History: At Governor Lamar Alexander's urging, in February 1984 a special session of the legislature enacted a "Better Schools Program" that relied in part on a one-cent increase of the state sales tax (from 4.5 cents to 5.5 cents). The program included a heralded career ladder for teachers. The sales tax was supposed to raise more than $1 billion over a three-year period.[55]

Result: As indicated in Table 11, real state support per pupil jumped 17.9 percent in the year after the tax increase and enjoyed good increases the following two years, 6.7 percent and 4.0 percent, respectively. That was the end of the good times, as increases were relatively small in the next three years, followed by cuts of 1.9 percent in 1990-91 and 6.6 percent in 1991-92.

Real local support per pupil was much steadier, with annual increases of between 2 percent and 5 percent for six consecutive years starting in 1984-85. These local increases were the result of local decisions; they were not required by the state.

Total state-local revenue per pupil jumped 11.1 percent in 1984-85 and rose 5.3, 3.2, and 2.5 percent, respectively, in the next three years. Starting in 1988-89, the increases tended to be smaller, going from 2.0 percent to 2.6 percent to -0.3 percent and finally 0.8 percent in 1991-92.

State share of school revenue: The state share of school revenue jumped from 51.6 percent in 1983-84 to 55.9 percent in 1986-87 and then fell each year until it reached 49.6 percent in 1991-92.

In spite of the 1984 initiative, Tennessee gained little ground compared to the national average in terms of revenue per pupil. State-local revenue per pupil rose only from 61.1 percent of the national average in 1983-84 to 61.6 percent in 1991-92. Still, if the 1984 tax increase had not occurred, schools would surely have fared considerably worse.

Diversion of sales tax increase: Although the sales tax increase was sold in the name of education, much of its revenue helped to fund other programs. If the share of the sales tax devoted to education had remained the same as it was from 1980 to 1983, state school aid would have been

[54] *South Carolina's property tax revenue per $100 of personal income rose from 69% to 80% of the national average between 1984 and 1992.*

[55] Education Week *(February 29, 1984), pp. 6, 18.*

Table 11
School Revenue per Pupil in Tennessee, 1984 to 1993
(in 1993 dollars)

Year	State	Local	Total	Percentage change		
				State	Local	Total
1983-84	$1,327	$1,247	$2,574			
1984-85	1,565	1,294	2,859	17.9%	3.8%	11.1%
1985-86	1,670	1,341	3,011	6.7	2.6	5.3
1986-87	1,737	1,370	3,107	4.0	2.1	3.2
1987-88	1,750	1,436	3,186	0.7	4.9	2.5
1988-89	1,751	1,499	3,250	0.1	4.4	2.0
1989-90	1,787	1,545	3,333	2.1	3.1	2.6
1990-91	1,754	1,569	3,323	-1.9	1.5	-0.3
1991-92	1,638	1,658	3,296	-6.6	5.7	0.8
1992-93	1,859	1,640	3,500	13.5	-1.1	6.2

only $5 million less than it actually was in 1987, even without the sales tax increase.[56]

The sales tax increase was not formally earmarked for education, and in fact not all of the revenue from it was used for schools. First, while Governor Alexander emphasized that the sales tax would raise teacher salaries, state employees actually received the same 10 percent salary increases as teachers. Besides the regular salary increase, some teachers also benefited from additional money for a new career ladder program. Second, some of the sales tax money was used to comply with a federal court order to upgrade the corrections system.[57] According to press reports, $65 million of that sales tax revenue was used for that purpose.

About the tax increase: The one-cent sales tax rate increase was projected to produce $281 million in fiscal year 1985. Additional revenue was to be obtained from extending the sales tax to admissions ($22 million), increasing the franchise tax ($40 million), and raising the insurance premiums tax ($7 million). The total increase in fiscal year 1985 was $350 million. But only the one-cent sales tax increase was committed to education.

1992

History: In March 1992, Governor Ned McWherter signed a bill raising the sales tax from 5.5 cents to 6 cents. Revenue from this increase, $230 million per year, was supposed to finance an "Education Improvement Act." Part of rationale for the tax increase was to restore $116 million cut from school aid in 1991. The increase was initially temporary but was made permanent in 1993.

The revenue from this increase was statutorily dedicated to a new education fund. An official of the Tennessee Education Association expresses

[56] *TEA News (March 1987), p. 9. Tennessee provides a good example of the irrelevancy of longstanding earmarking for education. As of fiscal year 1993, it earmarked 67.2% of the sales tax, 99.5% of tobacco taxes, and 48.1% of mixed drink taxes for education (including higher education). But theses taxes yielded only about two-thirds of what the state spent on education. So earmarking had no impact on spending at the margin. Arturo Perez and Ronald Snell,* Earmarking State Taxes, *3rd. ed (Denver: National Conference of State Legislatures, 1995).*

[57] *Letter to author from Jerry Winters, a government relations representative of the Tennessee Education Association (December 20, 1984).*

the view that this increase really did go to education, unlike the one in 1984.[58]

Result: Real state revenue per pupil jumped 13.5 percent in the next year. Since real local revenue per pupil fell slightly, the total increase in real revenue per pupil was 6.2 percent. State-local revenue per pupil jumped from 61.6 percent to 64.9 percent of the national average.

About the tax increase: The revenue from the sales tax rate increase was estimated to be $227 million in fiscal year 1993. Numerous other sales tax changes were made at the same time related to Medicaid funding, but they were unrelated to education.

Conclusion: Tennessee is another state, like Arkansas, that demonstrates the shortcoming of reliance on the sales tax as the principal mechanism for increasing school aid. In Tennessee's case, the problem is that the state does not impose a broad-based income tax. Governor McWherter fought for the enactment of an income tax as a better means for financing schools, but he did not have enough legislative support to come close to accomplishing that goal.

Although its economic growth was stronger than in most other states, in 1995 Tennessee once again had to grapple with a large prospective budget deficit. The short-run culprit was higher than expected costs for TennCare, its innovative managed care health program. But the underlying cause was its outmoded tax structure.

Texas

History: In July 1984, Governor Mark White signed the "Educational Opportunity Act of 1984" and a tax bill that accompanied it, representing the first major increase in Texas taxes in 13 years. The tax increase was expected to produce $4.7 billion over three years, of which $2.8 billion was to be devoted to schools. Support for the tax increase and associated reforms had been spear-headed by a Select Committee on Public Education appointed by the Governor and chaired by H. Ross Perot.[59]

The act included support for higher teacher salaries, increased equalization of resources among rich and poor school districts, teacher competency tests, increased state-wide testing of students, and a requirement that participants in sports and other extra-curricular activities maintain minimal grades in their courses.

Result: Real state support per pupil rose sharply the year after the tax increase, jumping 16.8 percent in 1985. But, as Table 12 shows, there was no follow-through, with decreases in each of the next five years.

Local support performed relatively better. In real per pupil dollars, it increased 6.6 percent and 3.0 percent in the first two years after the initiative. But in each of the next five years, gains were relatively small, fluctuating between 0.1 and 2.2 percent. The initial increases in local tax effort were in part a response to state pressures. The state forced up property taxes, particularly in high wealth school districts that formerly had relatively low tax rates.

Real state-local revenue per pupil rose 11.6 percent in 1985, but it did poorly the next five years, falling or remaining unchanged in each year.

Schools did much better in the 1990s, although this cannot be attributed to the 1984 tax

[58] *Ibid.*

[59] Education Week *(August 22, 1984), p. 30.*

Table 12
School Revenue per Pupil in Texas, 1984 to 1993
(in 1993 dollars)

Year	State	Local	Total	Percentage change		
				State	Local	Total
1983-84	$1,929	$2,006	$3,935			
1984-85	2,253	2,139	4,392	16.8%	6.6%	11.6%
1985-86	2,191	2,203	4,394	-2.8	3.0	0.0
1986-87	2,155	2,220	4,375	-1.6	0.8	-0.4
1987-88	2,066	2,222	4,288	-4.2	0.1	-2.0
1988-89	1,986	2,228	4,214	-3.9	0.2	-1.7
1989-90	1,942	2,273	4,215	-2.2	2.0	0.0
1990-91	2,129	2,324	4,452	9.6	2.2	5.6
1991-92	2,187	2,465	4,652	2.7	6.1	4.5
1992-93	2,319	2,547	4,867	6.1	3.3	4.6

increase. A state tax increase in 1991 helped, as did stronger economic growth. The growth of local revenue per pupil also accelerated somewhat, with increases of 6.1 percent in 1991-92 and 3.3 percent in 1992-93.[60]

State-local revenue per pupil rose from 93.4 percent of the national average in 1983-84 to 99.4 percent a year later, but then it began to slide. By 1992-93, Texas's spending was only 90.2 percent of the national average. In other words, the finance initiative was a failure from the viewpoint of bringing school spending closer to the national average.

State share of school revenue: The state's contribution to school revenue rose from 49.0 percent in 1983-84 to 51.3 percent in 1984-85, but then it fell to 46.0 percent in 1989-90 before rebounding slightly to 47.6 percent in 1992-93.

About the tax increase: The tax increase had numerous parts—increasing the sales tax rate from 4 to 4.125 percent, raising the franchise tax (the major business tax imposed in Texas), broadening the sales tax base to services (such as laundry and dry-cleaning and repairs of tangible personal property, excluding auto repairs), and increasing taxes on cigarettes, motor fuel, motor vehicle sales and rentals, and motor vehicle registrations.

The revenue from the tax increases was estimated to be $1.3 billion in 1985, $1.6 billion in 1986, and $1.8 billion in 1987. The largest parts were as follows (with revenue in 1985): sales tax (including the sales tax on motor vehicles), $466 million; motor vehicle registrations, $154 million; cigarette tax, $14 million; motor fuels tax, $420 million; alcoholic beverage taxes, $36 million; insurance tax, $26 million; and franchise tax, $155 million.[61]

Not all of the tax increase was intended for

[60] *The strong gains in the first several years of the 1990s did not continue in 1993-94. According to preliminary estimates, state-local revenue per pupil fell 2.6% that year.*

[61] *The franchise tax is the major business tax imposed in the state in lieu of a corporate income tax. Until 1991, it was based on a company's invested capital; since 1991 it also depends on net income.*

schools. Part was for highways, and an additional $660 million in the 1986-87 biennium was to be available for other programs.[62]

Perspective: Texas is hampered by the lack of a state personal income tax, and its economy was severely hurt in the mid- and late-1980s by declining oil production and low oil prices. In addition, its 1984 tax increase was woefully inadequate to fund a broad, sustained increase in school funding. It enacted further sales tax increases in 1986 (to 5.25%), 1987 (to 6%), and 1991 (to 6.25%). The 1987 tax bill (which also increased numerous other taxes and made permanent the temporary increases enacted in 1986) was considerably larger than the 1984 tax increase for education. It raised tax revenue $2.148 billion in 1989.

The 1986 and 1987 tax increases were in response to huge budget deficits caused by low oil prices. The state budget had been based on the assumption that the price of oil would average close to $25 per barrel (which was lower than the price at the time the budget was enacted). It was actually only a little more than half that price less than a year later. As a result of the revenue shortfall, the tax increases did not result in absolute increases in state education aid, but they did avoid decreases that would have been necessary otherwise.[63]

The 1991 tax increase raised general revenue taxes and fees $2.1 billion. Since the fiscal situation was not as dire as in 1987, this time schools did receive a significant increase in state aid as a result, 13.6 percent over the biennium.[64] A new state lottery also contributed to this increase.

An unusual feature of the Texas tax system is that it constitutionally earmarks a quarter of motor fuel taxes for school aid. (The remainder is devoted to highway-related expenditures.) This was significant because motor fuel taxes were raised three times—in 1984, 1987, and 1991. In 1991, schools received $238 million from these taxes.[65]

Because of the inadequacies of its state tax system, Texas has had to significantly increase its reliance on the property tax. Between 1982 and 1991, property tax revenue per $100 of personal income rose 37.9 percent, an increase exceeded in only four states.[66] In the early 1990s, it struggled to comply with a series of decisions by its supreme court declaring its school finance system to be inequitable. A system approved by the court in February 1995 relies on redistributing local property tax revenue to reduce disparities among school districts. It also requires the state to equalize revenue for construction. This is a part of school costs that the state had never funded previously.

Vermont

History: In April 1982, Governor Richard Snelling approved a tax increase to help reform school finance in Vermont. The measure raised the sales tax rate from 3 cents to 4 cents.

The sales tax increase was expected to raise $22.4 million, which would increase general school aid about 50 percent to $65 million. This was expected to increase the state's share of non-federal school costs to close to 40 percent from 27.9 percent, provide relief from high property

[62] *Texas Legislative Budget Board*, Fiscal Size Up: 1986-87 Biennium, *pp. 9-11.*

[63] *Texas Legislative Budget Board*, Fiscal Size Up: 1988-89 Biennium, *pp. 8-10, 55.*

[64] *Texas Legislative Budget Board*, Fiscal Size Up: *1992-93 Biennium, pp. 2-5, 4-1.*

[65] *Ibid, p. 2-4.*

[66] *The states with bigger increases were Wisconsin (46.4%), Louisiana (42.3%), Mississippi (38.7%), and Washington (53.0%). Except for Wisconsin, the other states have much lower school property taxes, less than half the level in Texas. Steven D. Gold, "School Property Taxes under Fire,"* State Fiscal Brief *19 (April 1994).*

taxes, and increase per pupil spending. Under the previous system, dating from 1969, the state was supposed to provide 40 percent of school revenue but had not come close to meeting that goal. The reform also changed the school aid formula, adding income as a factor determining local fiscal capacity along with property values.[57]

Result: As Table 13 shows, Vermont's real per pupil state support for schools rose strongly in 1983, jumping 32 percent. It continued to do well for the next five years, with large increases in nearly every year until 1989. The state adopted a new foundation aid program in 1987, resulting in a 25 percent overall increase in school revenue in the 1987-88 school year. Despite a 26.2 percent increase in state aid that year, local school revenue did not decrease. In fact, it rose nearly as much as state revenue, growing 24.3 percent.

As the economic prosperity of the 1980s waned, the good times ended; state support per pupil fell or increased slightly for five consecutive years. In fact, the state's contribution to general school aid peaked at $148.2 million in 1990-91. Four years later, it was only $139.6 million. The 1995-96 appropriation was $142.3 million, with widespread warnings that revenue shortfalls might cause that figure to be reduced.

The total increase of state support from 1982 to 1993 was 88.3 percent, one of the highest in the entire country. At the same time, local support also rose sharply, 45.4 percent. As a result, real

Table 13
School Revenue per Pupil in Vermont, 1982 to 1993
(in 1993 dollars)

Year	State	Local	Total	Percentage change		
				State	Local	Total
1981-82	$1,196	$2,824	$4,020			
1982-83	1,579	2,612	4,192	32.0%	-7.5%	4.3%
1983-84	1,649	2,787	4,436	4.4	6.7	5.8
1984-85	1,660	3,009	4,669	0.7	8.0	5.3
1985-86	1,769	3,143	4,912	6.6	4.5	5.2
1986-87	1,871	3,152	5,023	5.8	0.3	2.3
1987-88	2,361	3,918	6,279	26.2	24.3	25.0
1988-89	2,352	3,716	6,068	-0.4	-5.1	-3.4
1989-90	2,356	3,972	6,328	0.2	6.9	4.3
1990-91	2,373	4,249	6,622	0.7	7.0	4.6
1991-92	2,307	4,306	6,613	-2.8	1.3	-0.1
1992-93	2,253	4,105	6,358	-2.3	-4.7	-3.9

[57]Education Week *(November 16, 1981), p. 6;* Education Week *(March 10, 1982), p. 4;* Education Week *(April 28, 1982), p. 3. According to Gerald L. Cassell of the Vermont Department of Education, although the tax increase was sold as a means of increasing school aid, there was no formal earmarking of revenue. Cassell notes that including aid to special education, vocational education, and smaller categorical grants, school aid totaled $97.6 million in 1982-83 rather than $65 million of general aid. (Letter to author dated June 19, 1995)*

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revenue per pupil rose from being equal to the national average in 1981-82 to 17.8 percent above average in 1992-1993.

State share of school revenue: The share of revenue derived from state sources rose from 29.8 percent in 1981-82 to 37.4 percent the following year and was still 35.4 percent in 1992-93.

About the tax increase: Vermont bases its state income tax on federal tax liability. At the same time it raised the sales tax rate, it also raised the personal income tax rate from 23 percent of federal tax liability to 24 percent. That action did not result in any additional revenue for schools or other programs, since it merely offset part of the effect of President Ronald Reagan's 1981 federal tax cuts that were being phased in.

Conclusion: Vermont's large increases in school revenue occurred in the absence of legislated tax increases between 1983 and 1990. Its economy was strong, leading to big increases in tax revenue, and schools received a large share of the benefit. When the economy worsened in the 1990s, school funding languished even though taxes were increased substantially in 1991.[68] The economy clearly called the tune for school funding in Vermont.

Virginia

History: The 1984 legislature enacted large increases in school funding and numerous education reforms at the urging of Governor Charles S. Robb. The two-year budget provided for 10 percent teacher salary increases in both years. It also included reforms such as pilot career ladders, master teacher programs, and science-technology magnet schools.[69]

Unlike the other initiatives discussed in this booklet, Virginia did not increase any state taxes to fund this initiative.

Result: As Table 14 shows, real state support per pupil jumped 3.8 percent in 1985 and 16.7 percent in 1986. It continued to have strong increases in four of the next five years, with increases between 2.5 and 6.3 percent. The good times ended in 1992, when there was a 9.2 percent reduction as the state suffered from a fiscal crisis and refused to increase state taxes to help balance its budget.

Real local support per pupil also increased substantially in the 1980s. For six years after the 1984 school improvement initiative, local support rose between 3.3 percent and 6.0 percent each year. After 1990, for three years there was no increase, a small increase, and a decrease.

Real state-local revenue per pupil rose sharply after 1984, with annual increases of at least 3.9 percent for four years, before growth diminished. As a result, Virginia moved up in the national rankings for state-local revenue per pupil. In 1984, it was 93.6 percent of the national average, but by 1990 it was up to 99.6 percent of the national average. Even after the cutbacks of the early 1990s, in 1992-93, it was still 95.1 percent of the national average.

State share of school revenue: The state share of school revenue was relatively low in 1983-84 and remained low. It rose from 35.2 percent in 1983-84 to 37.4 percent two years later, but was back to 36.1 percent in 1992-93.

Conclusion: Virginia improved its school funding without the benefit of tax increases. The only tax increase in the 1980s was a sales tax increase earmarked for transportation.

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[68] *The sales and income taxes were both increased in 1991. The personal income tax increase expired after three years. The sales tax rate also was reduced in 1993, but it was raised again after only two months because of the state's poor fiscal condition.*

[69] Education Week *(April 4, 1984), p. 7.*

Table 14
School Revenue per Pupil in Virginia, 1984 to 1993
(in 1993 dollars)

Year	State	Local	Total	Percentage change		
				State	Local	Total
1983-84	$1,387	$2,556	$3,943			
1984-85	1,440	2,690	4,130	3.8%	5.2%	4.8%
1985-86	1,681	2,809	4,490	16.7	4.4	8.7
1986-87	1,723	2,943	4,665	2.5	4.8	3.9
1987-88	1,832	3,119	4,950	6.3	6.0	6.1
1988-89	1,844	3,221	5,065	0.7	3.3	2.3
1989-90	1,900	3,329	5,228	3.0	3.3	3.2
1990-91	1,976	3,328	5,304	4.0	0.0	1.5
1991-92	1,794	3,348	5,141	-9.2	0.6	-3.1
1992-93	1,853	3,280	5,132	3.3	-2.0	-0.2

Virginia benefited from a strong economy and a tax system with a substantial income tax. In 1991, 26.3 percent of its state-local tax revenue was from the personal income tax, considerably above the national average of 20.8 percent. Virginia governors Robb and Baliles also placed a high priority on education in the state budget and called upon local governments to make substantial contributions to increasing school revenue.

Education's share of the state general fund budget rose from 35.8 percent in the 1982-84 biennium to 37.3 percent in the 1984-86 biennium and to 37.5 percent in the 1986-88 biennium. Due to strong competition from Medicaid and corrections, its share receded to 35.6 percent in 1988-90 and to 35.4 percent in 1990-92, where it remained in 1992-94.[70]

Beginning in 1985, the state mandated large increases in teacher salaries for several years (10 percent, 10 percent, 7 percent and 4 percent over a four-year period), and required local schools to pay nearly half of this cost. It also shifted responsibility for pension and Social Security costs from being 100 percent state-funded to having local governments contribute part of the cost.[71]

Summary

To summarize the case studies in a nutshell, here is what happened:

Arkansas is a classic stop-and-go story. After it raised its sales tax one cent in 1983, schools enjoyed two good years of increases followed by five lean years. Likewise, local revenue went up strongly for a while and then petered out. By 1991, it was considered necessary to raise the sales tax again, this time by a half cent.

California enacted a lottery in 1984, with revenue dedicated to schools. Although the lottery produced more revenue than expected, it provided little help for financially hard-pressed schools.

[70] *By contrast, the K-12 share of the budget was 50.6% in the 1968-70 biennium. Information provided by Ralph J. Shotwell of the Virginia Education Association.*

[71] *At the same time, the state increased its share of the basic education formula (referred to as Standards of Quality) from 50% to 55%.*

After the state provided a larger than normal increase in funding the first year of the lottery, school revenue increases shrank as the state's fiscal condition worsened.

Indiana schools had big revenue increases after the 1987 tax increase, which relied mainly on the personal income tax. The large state revenue increases were combined with big increases in local revenue, as Indiana moved from below average to above average in school revenue per pupil.

Kansas increased sales and income taxes in order to provide property tax relief. Schools did not receive more money; it just came from a different source.

Kentucky raised business taxes in 1985, but they did not provide a basis for sustained increases in school revenue. In 1990, it increased sales and income taxes with better results. Throughout, local government revenue for schools increased steadily.

Missouri relied on income tax increases to raise school funding. Because the increases were not fully in effect until fiscal year 1995, it is too early to evaluate this strategy. Although the initial increase in school aid was large, there are indications that revenue may be insufficient to fully fund the four-year program to improve school finances.

Nebraska, like Kansas, increased sales and income taxes to provide property tax relief. The reform generally had its intended effect, although it fell short of the goal of raising the state share of school revenue to 45 percent. It probably forestalled a property tax revolt for a few years, but there is still considerable political momentum for further property tax relief, which could wreak havoc with school finance if it is not well designed.

South Carolina raised its sales tax to increase school aid in 1984. Real school revenue increased significantly in later years, but much of the credit should go to increases in local revenue. After a big one-year increase, state aid increases were relatively meager.

Tennessee, a state with an inelastic tax system, had to increase sales taxes twice to provide more money for schools. After large increases for three years following a 1984 increase, the state was unable to increase aid further for five years, leading to another sales tax increase in 1992. Meanwhile, it steadily increased local revenue for schools.

Texas's economy had a severe recession following its 1984 increase of the sales tax and other taxes. After a large one-year gain in school aid, real per pupil state aid fell for five consecutive years. School revenue fared better in the 1990s as the economy finally recovered, the state increased taxes again and local revenue rose significantly.

Vermont was the most successful of the states that relied solely on the sales tax to increase state school aid. But its large increases in school revenue owed much to substantial increases in local property taxes as well as to strong economic growth.

Virginia demonstrates that if economic growth is substantial, schools can have big revenue increases even without state tax increases. In addition to a strong economy, Virginia benefited from a state tax system that relies heavily on the personal income tax and large increases in local revenue for schools.

Table 15 provides a statistical snapshot of how state-local revenue per pupil changed in the years

following each school finance initiative. This table suggests four important points:

- As mentioned at the start of this discussion, most of the states had below-average spending before the initiative. States that have relatively high spending are much less likely to raise taxes to improve school funding.

- Even after the finance initiative, most of the states still had relatively low spending. If the initiative helped at all, it generally moved states closer to but did not vault them above the national average. The exceptions are Indiana and Vermont. Those two states also had the largest and the third largest increases in per pupil revenue relative to the national average. (Kentucky's post-1990 increase was slightly larger than Indiana's.)

- Most of the states had higher than average revenue increases. The only exceptions were Arkansas (before its 1991 tax increase), California (which instituted a lottery rather than increased taxes), and Texas.

- States that avoided the income tax generally did not fare particularly well. In both Kentucky (after 1985) and Tennessee (after 1984), revenue per pupil rose only slightly

Table 15
State-Local Revenue per Pupil Before and After Each Initiative

State	Base Year	% National Average		% point change
		Base Yr.	Final Yr.	
Arkansas	1984*	66.9%	64.5% (1991)	-2.4
	1991	64.5	71.2 (1993)	+6.7
California	1985*	101.1	93.6 (1993)	-7.4
Indiana	1987	91.9	104.5 (1993)	+12.6
Kansas	1992	92.1	Not available	
Kentucky	1986*	66.7	67.9 (1990)	+1.2
	1990	67.9	80.5 (1993)	+12.6
Missouri	1993	86.5	Not available	
Nebraska	1989*	79.3	84.1 (1993)	+4.8
South Carolina	1984	72.1	81.9 (1993)	+9.8
Tennessee	1984	61.1	61.6 (1992)	+0.5
	1992	61.6	64.9 (1993)	+3.3
Texas	1984	93.4	90.2 (1993)	-3.2
Vermont	1982	100.1	117.8 (1993)	+17.7
Virginia	1984	93.6	95.1 (1993)	+1.5

Note: *In these states the base year is different from the year in which the initiative was approved; it is the year before it had an effect on school revenue. In other states, the base year is the same as the year when the initiative was approved.

For Indiana, revenue is for the calendar year rather than the fiscal year.

relative to the national average before they raised taxes a second time. Arkansas did even worse after its 1983 sales tax increase, as did Texas after its 1984 increase. The two exceptions are South Carolina and Vermont. In both cases, local revenue had a great deal to do with the strong increase in total revenue. Vermont also benefited from a strong economy.

It is important to emphasize that the relative increases in school revenue shown in Table 15 are sensitive to the time since the tax increase occurred. It is too early to pass judgment on the long-run effects of the five increases that occurred in the 1990s (in Arkansas, Kansas, Kentucky, Missouri, and Tennessee). The prognosis is not particularly good in Arkansas and Tennessee, and Kentucky and Missouri still have tax systems with serious defects.

SUMMARY AND CONCLUSIONS

What do the case studies in the previous chapter tell us about the design of programs to improve school funding? They suggest at least six major lessons:

1. The year after a reform there is always a big increase in state funding. But the follow-through differs. Sometimes schools receive sustained funding increases in later years, but sometimes they do not.

2. The sales tax by itself does not provide the basis for large, sustained revenue increases. Five of the states used the sales tax as the sole or principal source of revenue to increase school funding (Arkansas, South Carolina, Tennessee, Texas, and Vermont). The subsequent revenue increases in Arkansas, Tennessee, and Texas were disappointing. Successes in South Carolina and Vermont depended heavily on substantial local revenue increases rather than simply their sales tax increases. Raising the sales tax in the context of an inelastic revenue system is like patching up a broken machine: it keeps it running for a while, but it is not an adequate long-run solution.

3. The personal income tax is the best tool for increasing revenue, followed by the sales tax. California in 1984 and Kentucky in 1985 tried to increase school funding without relying on either of those taxes, using lotteries and business taxes. Schools did not benefit much because the potential of revenue sources other than the income and sales taxes is so limited.

4. Local taxes should not be neglected. It is much easier to have a big increase in school revenue when local taxes are going up along with state taxes.

5. Increasing taxes is always better for schools than leaving the tax system alone without a tax hike. Even if a state relies on raising inelastic taxes, more money is better than less money. Arkansas, Tennessee, and Texas did not have great follow-through after their sales tax increases and had to raise taxes again after less than a decade, but schools would have been even worse off if the states had stood pat.

6. There is no substitute for a strong economy. If economic growth is sluggish, revenue increases will not be impressive even if elastic taxes are raised.

The sixth lesson is also one of the major findings of the statistical analysis of variations among states. The growth of state personal income is a major determinant of how well schools fare financially.

The analysis also confirmed the tendency for levels of revenue per pupil to converge. The states with low revenue in 1983 tended to have faster than average increases in the following decade.

Inadequate tax systems and problems in financing schools tend to go together. The states discussed in this booklet all have one thing in common: They made commitments to improve school funding at one point in time. But they differ in what happened next. The states that did not increase the income tax tended to fare less well than those that relied in part on that tax. This is one of the enduring lessons that states must consider as they face the issue of how best to provide the funding needed to have high-quality education systems.

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